Manufacturing Learning Australia

PMA02 — Volume 1

Structure and Guidance;

Core and Support Competencies

for the

PMA02 Chemical, Hydrocarbons and Oil Refining Training Package

Volume 1 of a two-volume set which comprises the Endorsed Component of the Training Package

Volume 1
Structure and Guidance;
Core and Support Competencies (series 100 to 300)
Volume 2
Competency Standards: Operations Competencies;
Support Competencies (series 400 to 600)

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Contents — PMA02

Volume 1: Structure and Guidance

Volume 2: Competency Standards

List of qualifications

In this Training Package, the following qualifications are available

Certificate I in Process Plant Skills	PMA10102
Certificate I in Process Support	PMA10202
Certificate II in Process Plant Operations	PMA20102
Certificate II in Process Support	PMA20202
Certificate III in Process Plant Operations	PMA30102
Certificate III in Process Support	PMA30202
Certificate IV in Process Plant Technology	PMA40102
Diploma of Process Plant Technology	PMA50102
Advanced Diploma of Process Plant Technology	PMA60102

Important information

Training Packages are not static documents. Changes are made periodically to reflect the latest industry practices.

Before commencing any form of training or assessment, you must ensure delivery is from the current version of the Training Package.

To ensure you are complying with this requirement:

- check the Print Version Number found just below the copyright statement on the imprint page of your current Training Package;
- access the ATP website (http://www.atpl.net.au) and check the latest Print Version Number, which is displayed in the sample of the Training Package;
- in cases where the Print Version Number is later than yours, the Print Version Modification History in the Training Package sample on the ATP website will indicate the changes that have been made.

The Modification History is also available on the website of Manufacturing Learning Australia http://www.mlaust.com.

The National Training Information Service (http://www.ntis.gov.au) also displays any changes in units of competency and the packaging of qualifications.

PMA02 Print version modification history

MODIFICATION HISTORY — ENDORSED MATERIALS

Please refer to the National Training Information Service for the latest version of units of competency and Qualification information (http://www.ntis.gov.au).

Chemical, Hydrocarbons and Oil Refining Training Package — PMA02 | **Sheet 1 of 2**

Version	Date of Release	Authorisation	Comments
3	04/07/2007	DEST	Addition of 9 new elective production units of competency for aluminium smelting. The new units are coded "PMASMELT" – refer page v for list of units and relevant certificates. The new units have also been added to the mapping tables. Reference to 'Statement of Attainment in Contractor Safety' has also been removed for List of Qualifications and advice in the Qualifications Framework.
2	01/06/2004	ANTA	Addition of suite of new elective support units of competency for on/offshore and Major Hazard Facility incident response: 20 new units coded 'PMAOMIR'; revisions to 6 'PMAOHS' units; 3 Public Safety units (imported); deletion of unit PMAOHS217A Monitor hazardous atmospheres which is replaced by PMAOMIR217A Gas test atmospheres. (Refer below — p. v for the list of units and relevant certificates.) Prerequisites for PMAOPS312A Undertake ship loading/unloading operations corrected to read 'PMAOPS201A Operate particulates handling equipment OR PMAOPS222A Operate and monitor pumping systems and equipment OR PMAOPS223A Operate and monitor valve systems' Corrections and clarifications in the mapping tables.
1	31/03/2004	ANTA	The pre-requisite for PMASUP600B Modify plant has been corrected to read PMASUP540A Analyse equipment performance. PMASUP421A Review procedures to minimise environmental impact of process incorrectly remained in the Training Package despite the intention for it to be deleted before publication. Reference to PMASUP421A has been deleted throughout. The codes for the following 3 units have been corrected to A versions throughout: BSATEM101A Participate in a team to achieve designated tasks. BSATEM201A Participate in allocation and completion of team tasks BSATEM301A Negotiate with team members to allocate and complete tasks to achieve team goals
1	10/12/2003	ANTA	Update of OHS content of 24 units, resulting in version changes to the units. These updated versions now appear throughout the Training Package: PMAOHS100B Follow OHS procedures PMAOHS110B Respond to emergency situation PMAOHS200B Participate in workplace safety procedures PMAOHS300B Implement and monitor OHS policies and procedures for a workgroup PMAOHS400B Contribute to workplace OHS management system PMAOHS401B Assess risk PMAOHS510B Manage risk PMAOPS101B Read dials and indicators PMAOPS105B Select and prepare materials PMAOPS401B Trial new process/product PMAOPS520B Manage utilities

			PMAOPS521B Plan plant shutdown PMAOPS600B Modify plant PMAPER200C Work in accordance with an issued permit PMAPER201C Monitor and control work permits PMAPER205B Enter confined space PMAPER300C Issue work permits PMAPER302B Issue work permits (hot work/ confined space) PMASUP100B Apply workplace procedures PMASUP130B Follow established work plan PMASUP200B Implement production efficiencies PMASUP300B Identify and implement opportunities to maximise production efficiencies PMASUP330B Schedule production PMASUP441B Decommission plant Inclusion of 2 new units to replace three units. PMAOHS503A Maintain workplace OHS management system replaces: PMAOHS500A Manage workplace OHS management system PMAOHS501A Evaluate and improve workplace OHS management system PMAOHS601A Establish workplace OHS management system replaces: PMAOHS600A Ensure a safe workplace Correction of typos in several units, especially: PMAOPS211A Operate manufacturing extruders — Element 8 Respond to prime mover problems changed to Respond to extruder problems. PMAOPS213A Package product/material — Element 5 Respond to prime mover problems changed to Respond to packaging plant/process problems. PMAOPS307A Transfer bulk fluids into/out of storage facility — Element 6 Respond to problems changed to Resolve problems PMAOPS308A Organise storage and logistics of general materials — Element 4 Respond to problems changed to Resolve problems PMAOPS309A Operate particulates handling/storage equipment — Element 7 Respond to problems changed to Resolve problems PMAOPS321A Undertake well management — Element 7 Respond to problems changed to Resolve problems PMAOPS390A Operate a biochemical process — Element 7 Respond to problems changed to Resolve problems
1.00	9/12/2002	NTQC	Primary Release (note Fully revised version of PMA98)

Forms control: All endorsed Training Packages will have a version number displayed on the imprint page of every volume constituting that Training Package. Every Training Package will display an up-to-date copy of this modification history form, to be placed immediately after the contents page of the first volume of the Training Package.

Comments on changes will only show sufficient detail to enable a user to identify the nature and location of the change. Changes to Training Packages will generally be batched at quarterly intervals. This modification history form will be included within any displayed sample of that Training Package and will constitute all detail available to identify changes.

New units of competency – Version 3

New units		Relevant Certificates in PMA02
PMASMELT260A	Form carbon anodes	PMA20102, PMA20202, PMA30102, PMA30202, PMA40102, PMA50102, PMA60102
PMASMELT261A	Bake carbon anodes	
PMASMELT262A	Clean and strip anode rods	
PMASMELT263A	Spray carbon anodes	
PMASMELT264A	Start up reduction cells	
PMASMELT265A	Operate reduction cells	
PMASMELT266A	Deliver molten metal	
PMASMELT267A	Cast aluminium ingots	
PMASMELT268A	Vertical Direct Casting	

New and revised competencies – Version 2

New units		Relevant Certificates in PMA02
PMAOMIR205A	Control minor incidents	PMA20102, PMA20202, PMA30102, PMA30202, PMA40102, PMA50102, PMA60102
PMAOMIR210A	Control evacuation to muster point	PMA20102, PMA20202, PMA30102, PMA30202, PMA40102, PMA50102, PMA60102
PMAOMIR217A	Gas test atmospheres *(replaces PMAOHS217A Monitor hazardous atmospheres)*	PMA20102, PMA20202, PMA30102, PMA30202, PMA40102, PMA50102, PMA60102
PMAOMIR301A	Undertake initial rescue	PMA30102, PMA30202, PMA40102, PMA50102, PMA60102
PMAOMIR302A	Respond to a helideck incident	PMA30102, PMA30202, PMA40102, PMA50102, PMA60102
PMAOMIR317A	Facilitate search and rescue operations	PMA30102, PMA30202, PMA40102, PMA50102, PMA60102
PMAOMIR320A	Manage incident response information	PMA30102, PMA30202, PMA40102, PMA50102, PMA60102
PMAOMIR321A	Manage communication systems during an incident	PMA30102, PMA30202, PMA40102, PMA50102, PMA60102
PMAOMIR346A	Assess and secure an incident site	PMA30102, PMA30202, PMA40102, PMA50102, PMA60102
PMAOMIR407A	Audit incident preparedness and established response system	PMA40102, PMA50102, PMA60102
PMAOMIR418A	Coordinate incident response	PMA40102, PMA50102, PMA60102
PMAOMIR424A	Develop and maintain community relationships	PMA40102, PMA50102, PMA60102
PMAOMIR430A	Conduct and assess incident exercises	PMA40102, PMA50102, PMA60102
PMAOMIR444A	Develop incident containment tactics	PMA40102, PMA50102, PMA60102
PMAOMIR449A	Monitor legal compliance obligations during incidents	PMA40102, PMA50102, PMA60102

PMAOMIR512A	Establish incident response preparedness and response systems	PMA50102, PMA60102
PMAOMIR523A	Manage corporate media requirements in a crisis	PMA50102, PMA60102
PMAOMIR575A	Coordinate welfare support activities in response to an incident	PMA50102, PMA60102
PMAOMIR622A	Build partnerships to improve incident response capacity	PMA60102
PMAOMIR650A	Manage a crisis	PMA60102
Revised existing PMAOHS units		
PMAOHS100C	Follow OHS procedures	PMA10102, PMA10202
PMAOHS210B	Undertake first response to non-fire incidents	PMA20102, PMA20202, PMA30102, PMA30202, PMA40102, PMA50102, PMA60102
PMAOHS212B	Undertake first response to fire incidents	PMA20102, PMA20202, PMA30102, PMA30202, PMA40102, PMA50102, PMA60102
PMAOHS216B	Operate breathing apparatus	PMA20102, PMA20202, PMA30102, PMA30202, PMA40102, PMA50102, PMA60102
PMAOHS320B	Provide advanced first aid response	PMA30102, PMA30202, PMA40102, PMA50102, PMA60102
PMAOHS410B	Manage emergency incidents	PMA40102, PMA50102, PMA60102
Public Safety units to be imported as electives in PMA02		
PUASAR003A	Undertake technical rescue	PMA30102, PMA30202, PMA40102, PMA50102, PMA60102
PUASAR004A	Undertake vertical rescue	PMA30102, PMA30202, PMA40102, PMA50102, PMA60102
PUAFIR306A	Render hazardous materials safe	PMA30102, PMA30202, PMA40102, PMA50102, PMA60102

Background

for the

PMA02 Chemical, Hydrocarbons and Oil Refining Training Package

What is a Training Package?

Introduction

Training Packages are a key feature of vocational education and training in Australia. They are part of the National Training Framework that aims to make training and regulatory arrangements simple, flexible and relevant to the needs of industry.

Training Packages are developed by industry for industry

The Australian National Training Authority funds National Industry Training Advisory Bodies (ITABs) and Recognised Bodies to develop Training Packages. Extensive consultation occurs during development to ensure that the Training Package is relevant and useable. And before the completed Training Package is endorsed for use, the developer or ITAB must validate it and show that it has broad industry support.

Training Packages encourage training at work

Training may occur at the workplace, off the job, at a training organisation, during regular work, or through work experience, work placement or work simulation. Usually it involves a combination of these methods, depending on what suits the learner and the type of learning and particular vocational outcome.

Training Packages provide many pathways to competency

Australians can achieve vocational competency in many ways. Training Packages acknowledge this by emphasising what the learner can do, not how or where they learned to do it. For example, some experienced workers might be able to demonstrate competency against the standards and gain a qualification without completing a formal training course.

Training Package components

A Training Package comprises two components; endorsed material and support materials. The Australian National Training Authority's National Training Quality Council oversees the endorsed component.

Endorsed materials

Endorsed components of a Training Package consist of three parts: Competency Standards, National Qualifications, and Assessment Guidelines. Each of these components is outlined below.

Competency standards provide an industry benchmark for training and assessment. They specify the scope of knowledge and skills to be covered in the Training Package. They enable enterprises to accurately define particular roles within industry, and are a useful guide when designing job classifications, workplace appraisal, and skill development. They are the basis for designing

vocational education and training courses and assessment approaches for delivery off the job by registered training providers.

Key features

- Each unit of competency identifies a discrete workplace requirement.
- Units incorporate the knowledge and skills that underpin competency. They encompass relevant values and attitudes, language, literacy and numeracy, and occupational health and safety requirements.
- Key Competencies are identified at the unit or qualification level.
- Units are flexible in how they can be applied, but they are sufficiently detailed to guide registered training organisations (RTOs) and assessors, and to provide consistent outcomes.

National qualifications within the Australian Qualifications Framework (AQF) are awarded when a learner (who might be an employee) has been assessed as achieving a combination of units of competency that provides a meaningful outcome at an industry or enterprise level. Each qualification consists of a number of core and/or elective units of competency that industry representatives consider workers require to perform a particular job. Where an individual achieves one or more units of competency without completing a qualification, a Statement of Attainment is issued that recognises their achievement.

Key features

- Each qualification (comprising specified units of competency) is aligned directly against the AQF.
- The qualifications covered within a Training Package may range from Certificate I to Advanced Diploma, and will include the national title for each qualification.
- New Apprenticeship pathways will be identified within the Training Package.
- The Qualification will display the Nationally Recognised Training logo.

A **statement of attainment** is issued to individuals who have been assessed and deemed competent against a unit of competency. Statements of Attainment issued by one RTO must be recognised by other RTOs. Accrual of specified Statements of Attainment can eventually lead to a learner meeting all the requirements of a qualification.

Key features

- Statements of Attainment will identify the units of competency for which the individual has been assessed and is deemed competent by the RTO.
- They will display the Nationally Recognised Training logo.

- They will identify the RTO.

Assessment guidelines provide a framework for accurate, reliable and valid assessment of the applicable Competency Standards. They ensure that all assessments are thorough, consistent and valid. They provide important quality assurance in the issuing of qualifications.

Endorsed components of a Training Package may be complemented and supported by the development of optional learning strategies, assessment tools and professional development materials.

Support Materials

Support materials to be used in conjunction with Training Package can be produced by RTOs, private and commercial developers, DETYA, State Training Authorities or through DEST. They can consist of:

- learning strategies that assist training providers to design specific training programs that will help trainees attain the required competencies;

- assessment materials that can be used by assessors to gather sufficient evidence of competency to make reliable judgements about whether a person has met the required Competency Standard;

- professional development materials that provide information, hints and resources for trainers and assessors that will help them successfully implement the Training Package.

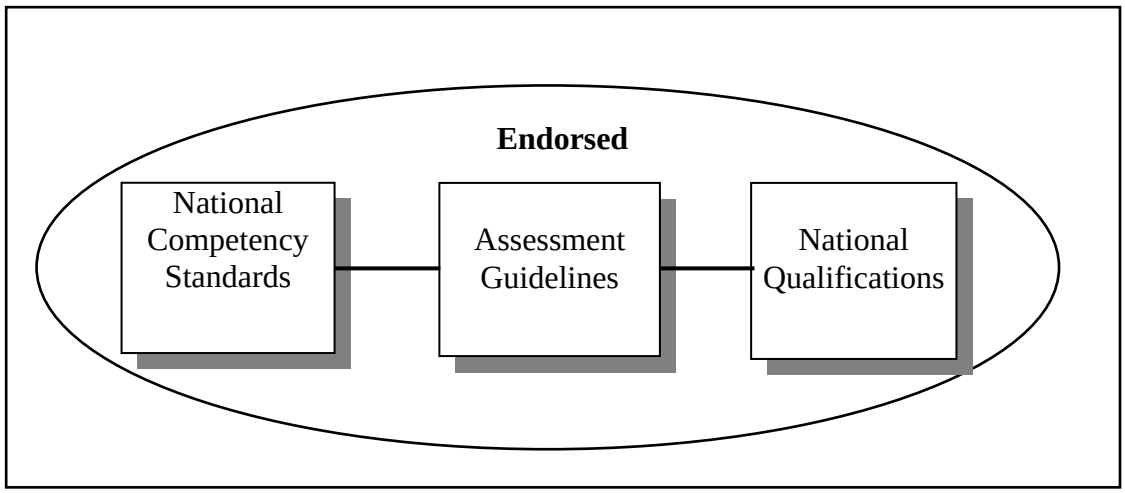
RTOs will usually develop their own supporting resources. They can also draw upon any other resources developed specifically to support the Training Package. Support materials that have passed successfully through DEST's official "Noting" process can use the official logo to indicate that they meet specified quality criteria. The logo is depicted here.

Noted support materials are listed on the National Training Information Service (NTIS), together with a detailed description and information on their availability and the type of product. NTIS can be located on http://www.ntis.gov.au

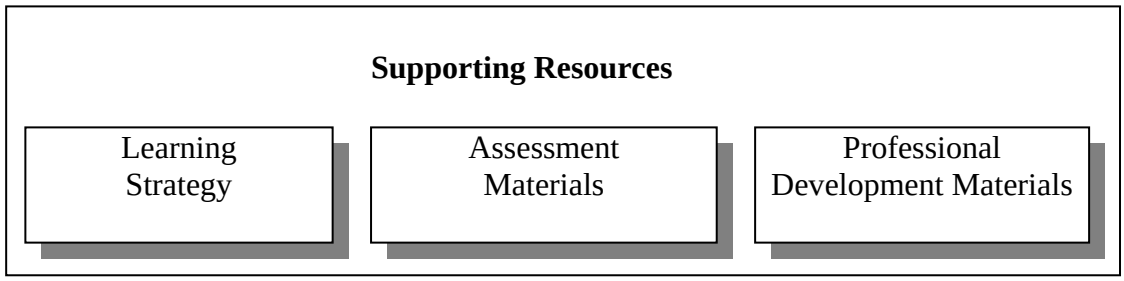
Although the noting process has been adopted as a guide to quality-assured supporting resources, it is not compulsory for RTOs to submit their support resources to DEST. They are at liberty to use whatever resources are available to them to meet the requirements of a qualification or a unit of competency.

General information

The components of an endorsed Training Package are illustrated in the following diagram:



Supporting resources are generally produced to directly relate to a single or multiple units of competency, industry sector, qualification or the total Training Package. They tend to fall into one or more of the categories illustrated below.



Version control

DEST has a system for tracking changes across subsequent editions of Training Packages and their constituent components. Anyone using a Training Package should follow DEST's recommended procedure for determining the currency of the information in their edition.

Training Package

Each Training Package has been assigned a unique five-character code, for example PMA02 for this Training Package. The final two characters (the version identifier) represent the year the Training Package was initially endorsed. Units of competency and qualifications originating in that Training Package will have their own longer codes, which will commence with the first three letters of the Training Package code (PMA in this example).

Units of competency

Whereas the first three characters of the code assigned signify the Training Package, the last character will always be a letter representing the version identifier. The code for a unit of competency is assigned when the initial Training Package is endorsed, or when new sectors or new units are added to an existing

endorsed Training Package. A typical code consists of up to 12 characters. These characters normally consist of a mixture of capital letters and numbers. A typical style of code may be PMAOPS200A. The first three characters are always letters and are the same letters used to code the original Training Package of which the unit was part. In the example, the code for the original Training Package commenced with PMA. The last letter (A) in the unit of competency code is the letter used for the version control. The "A" indicates that this is a new unit or a unit with a new code number.

If one lot of changes has been incorporated since the unit was first endorsed, but without any change to the unit outcomes, the version identifier will be a "B". The different version identifier usually means that minor changes have been incorporated without affecting the overall unit outcome. Typically this would mean that wording has changed in the Range Statement or the Evidence Guide, providing clearer intent. The next batch of minor changes would result in a "C", and so on throughout the life of the unit.

Any letters or numbers (this can be up to eight characters) between the first three characters and the version control letter are assigned by the developer of the unit and may relate to an industry sector, function or skill area, eg, the OPS letters indicate that this is an ‘operations’ unit..

Where changes are incorporated that alter the unit outcome, a new code is assigned and changes are made to the unit title.

Differences in the version identifier of Units of competency on Statements of Attainment issued by RTOs are not significant, as outcomes of the unit have not changed significantly.

Qualifications

All qualifications are assigned a unique eight-character code. The last two characters (version identifier) are always numbers and represent the year in which the qualification was endorsed. In all instances, qualifications included and endorsed in the original Training Package have an identical version identifier to those of the originating Training Package. In cases where qualifications are added after the initial endorsement of the Training Package, they are assigned a version identifier denoting the year they were endorsed.

Review date

On the title page and in the footer of each Training Package page there is reference to a review date. This date is determined at the time of endorsement of the Training Package and indicates when the Training Package is to be reviewed in the light of changing technologies, circumstances, industrial relations etc. The review date is not to be regarded as an expiry date as the Training Package and its components remain current until they are reviewed or replaced.

Industry coverage

The process manufacturing industry

The process manufacturing industries include the major industry sectors of:

- chemical, hydrocarbons and oil refining (CHO) (ANZSIC classification 12 and 251 to 254[1]) represented by PMA02 Training Package
- iron and steel (ANZSIC classification 271) — currently no Training Package
- manufactured mineral products (MMP) (statistically the non-metallic minerals sector ANZSIC classification 26) represented by PMC99 Training Package
- plastics, rubber and cablemaking (PR&C) (ANZSIC classifications 255 and 2852) represented by PMB01 Training Package
- laboratory technicians (across all sectors) represented by PML99 Training Package

The process manufacturing industries have common boundaries with the extractive industries (Mining and Drilling Training Packages) on the upstream end and the automotive, general manufacturing, building and construction and food and beverage industries on the downstream end (as shown in figure 1).

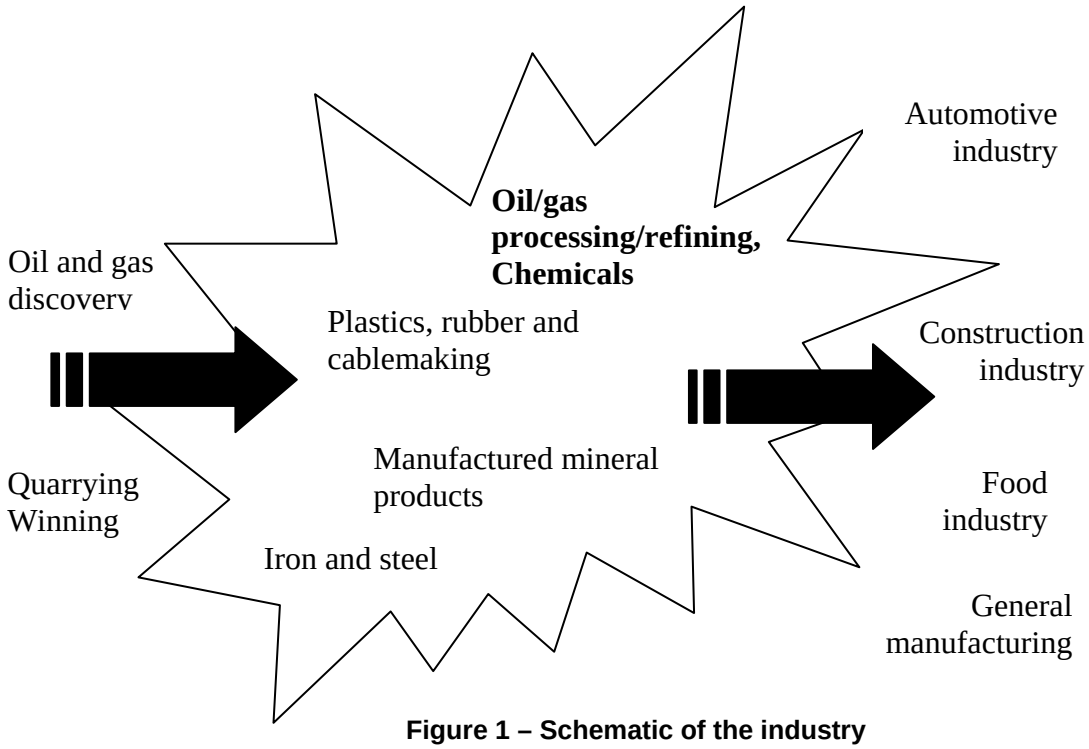


Figure 1 – Schematic of the industry

[1] The subsectors of 2543, Medicinal and Pharmaceutical Product Manufacturing, 2546, Cosmetic and Toiletry Preparation Manufacturing and 2547, ink manufacturing may not regard themselves as part of this sector.

The industry naturally overlaps with the supporting and service industries such as maintenance trades (Metal and Engineering Training Package), administration (Business Services Training Package), sales and marketing (Wholesale and Retail Training Packages) and the professional areas of technical and management support.

In reality, of course, the boundaries are not as neat and tidy as this implies. Companies such as Bostik and Kodak belong in multiple sectors and companies may have a production workforce which spans more than one ITAB.

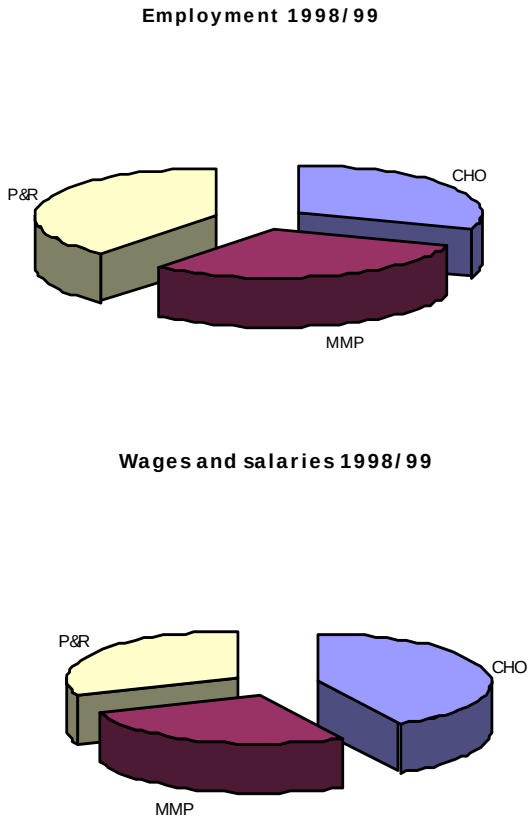


Figure 3

The three process manufacturing sectors represented by MLA Training Packages in 1998/99 in total employed 117 000[2] people (all manufacturing 923 400), paid wages and salaries of \$9 524 x 10^6 (all manufacturing \$35 016 x 10^6), had a turnover of \$50 309 x 10^6 (all manufacturing \$220 848 x 10^6) and added value to the tune of \$19 550 x 10^6 (all manufacturing \$68 930x10^6). Its contribution to the economy compares favorably with the manufacturing sector in general with turnover per person being \$7 165 000 (all manufacturing \$239 000) and value added per person being \$1 825 000 (all manufacturing \$75 000). This clearly demonstrates the high productivity, high capital investment and high value to the economy of the process manufacturing industries.

[2] Figures for 1998/99 from Australian Bureau of Statistics, *Manufacturing Industry 8221.0*, 22 September 2000

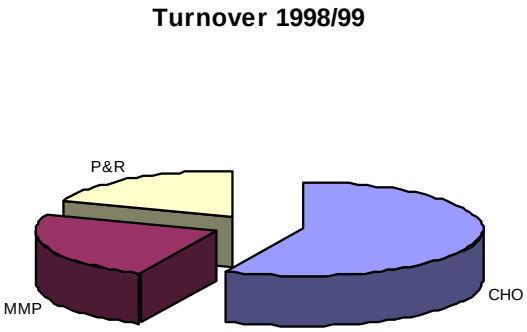


Figure 4

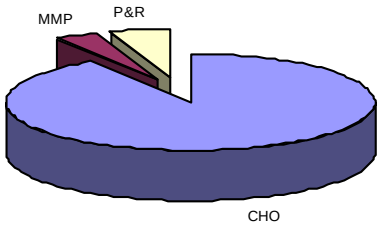


Figure 5

The chemical, hydrocarbons and oil refining industry

The hydrocarbons sector is downstream to the hydrocarbons exploration and drilling sectors and commences once a production well is established. Its products are distributed to the downstream hydrocarbons, oil refining and petrochemical sectors as well as the utilities industry. Other sectors of the chemical industry will start with raw materials such as common salt, sulphur or starch to produce their products.

Most products from this industry are not used directly by the consumer but rather are transformed by downstream industries such as plastics, food and clothing into consumer products. The major exceptions to this rule would be oil refinery products (petrol and lube oil) and paint.

Development of PMA02

PMA98

The original Chemical, Hydrocarbons and Oil Refining Training Package was developed by Manufacturing Learning Australia (MLA) with funding provided by the Australian National training Authority (ANTA). The development was done by Total Training and Performance Solutions (TaPS) during the second half of 1997. The Training Package was endorsed early in 1998.

ANTA also funded the Office of Technical and Further Education of Victoria to develop an implementation guide. This was published in June 1999. Implementation guides (or their equivalents) became available in other States after this time. After the availability of the guides, State and Territory industry training advisory bodies began a round of implementation workshops.

PMA98 received the maximum three years endorsement.

PMA02 — Version 1

The review occurred in two stages. Phase I of the review to determine the strengths and weaknesses of PMA98 and the scope of revisions needed was conducted from May to October 2000. The Phase II review (conducted by TaPS) commenced in August 2001 and was concluded in July 2002.

National consultations were held using focus groups and individual interviews. Technical experts were used for writing/reviewing units of competency in specific areas. The draft new units and revised existing units were validated through a similar mechanism. A list of all those who participated begins on the next page.

The review was held in the ‘post Longford’ environment. This had a serious impact on the emphases of the industry, particularly those in Victoria where many were expending significant effort to develop their safety case as required under the new major hazard facility regulations. In addition to this the States had generally just introduced new OHS legislation and regulations requiring a risk management approach to health and safety. This was a major factor and led to the incorporation of an element on controlling hazards in each OPS unit.

The industry steering committee contained a wide spread of both industry and RTO representation, as well as STA and ITAB representation. It contributed to the design of the reviewed Training package as well as providing critical feedback on all components.

Awards, licensing and other regulatory issues

Various awards apply within this industry, and some employees are non-award. This Training package was designed to allow for these different arrangements. It is appropriate to use this Training Package as part of an award/agreement, but it has not been designed to fit any particular award.

There are no general licensing issues, however specific licenses may be required in some jobs. The local regulations should be checked for details. The industry is generally subject to a range of regulatory control such as environmental licenses and major hazard facility regulations. These vary with the nature of the facility and to some extent on its location as most regulations are State based and many are enforced by local government. This Training Package allows for these differences without mandating them to specific units of competency which would not be appropriate.

The steering committee

The steering committee contributed much time and expertise to this project and their contribution is gratefully acknowledged. The steering committee members were:

David	Gaulke	Box Hill Institute	VIC
David	Graham	Huntsman Chemical Co	VIC
Michael	Hambrook	APMF	NSW
Di	Paton	ANTA	VIC
Sue	Honeywill	DET, NSW	NSW
John	Jones	Shell Refinery	NSW
Fay	Lamont	Nowra Chemicals	NSW
Ewan	MacPherson	Australian Institute of Petroleum	ACT
Mike	McLeay	MD & Associates	NSW
Carolyn	Paul	Incitec	QLD
Carl	Phillips	AWU	VIC
Malcolm	McIntosh	MLSA	SA
Barbara	Wallace	MLA	NSW

The industry participants

Many people made time in their busy schedule to participate in this project. Without their expertise and input, the project would not have been able to achieve its objectives and this is also gratefully acknowledged. The participants were:

Ewan	MacPherson	Australian Institite of Petroleum	ACT
John	Arrowsmith	Cosmetic, Toiletry & Frag Assoc	NSW
Mark	Barrack	Castle Chemicals	NSW
Ken	Blee	Ecolab Pty Ltd	NSW
Michael	Bonadio	Orica Ltd (Explosives)	NSW
John	Bremner	Taubmans	NSW
Shayne	Brown	Caltex, Kurnell	NSW
Joe	Calabrese	Australian Gas Light	NSW
Bronwyn	Capanna	Aust Consumer Specialitys Producers Assn (ACSPA)	NSW
Susanne	Fair	Hunter Institute TAFE	NSW
Anthony	Georgeson	Orica Explosives	NSW
Mark	Gibb	Pasminco, Cockle Creek	NSW
Ian	Gilson	ADI Limited	NSW
Sally	Glanville	Lubrizol International Inc	NSW

John	Glover	Taubmans	NSW
Phil	Hanley	Ashland Pacific	NSW
Brian	Hanley	Manildra Group	NSW
Michael	Hambrook	Australian Paint Manufacturers' Federation	NSW
Mark	Harris	Selleys Pty Ltd	NSW
Rosemary	Heffernan	Board of Studies	NSW
Karen	Highfield	NOHSC	NSW
Sue	Honeywill	DET, NSW	NSW
Jonathon	Horan	Taubmans	NSW
Peter	Hutchison	Alpha Chemicals P/L	NSW
John	Jones	Shell Refinery	NSW
Howard	Kennedy	Board of Studies	NSW
Ed	Kranjak	TAFE — Newcastle	NSW
Fay	Lamont	Nowra Chemical Mfg P/L	NSW
John J.	Lamont	Nowra Chemical Mfg P/L	NSW
Phil	Langdale	Taubmans	NSW
Shawn	Lee	DET — Edu Serv. Unit	NSW
Lea	Maher	LMA The Safe Move	NSW
Greg	Martin	Shell Refining (Australia) Pty Ltd	NSW
Chris	Maxfield	Pasminco	NSW
Mike	McLeay	MD & Associates	NSW
Wayne	Morris	Wattyl	NSW
Graeme	Ovenstone	Pasminco, Cockle Creek	NSW
Kim	Peterson	Bankstown TAFE	NSW
Sandy	Proctor	Australian Gas Light	NSW
Jackie	Puckeridge	Ariginisle	NSW
Rob	Randall	Board of Studies	NSW
John	Rock	TAFE — Granville	NSW
Joe	Rodgers-Falk	Wattyl	NSW
Dory	Russell	TAFE NSW	NSW
Malcolm	Sherlock	Caltex Aust.	NSW
Mel	Teterin	Orica Ltd (Explosives)	NSW
Barbara	Wallace	MLA	NSW
Barbara	Whey	Colgate-Palmolive P/L	NSW
Peter	White	Castrol Australia P/L	NSW
Grant	Young	Coates Australia	NSW
Gil	Court	Major Industries Training Advisory Council Ltd	NT
Yvette	Dyer	Major Industries Training Advisory Council Ltd	NT
Terry	Hudson		NT
Bruce	Keeley	Northern Territory University	NT
Kathy	Robertson	Major Industries Training Advisory Council Ltd	NT
Donna	Barry	Gas and Petrochemical Industry Training Organisation	NZ
Lynley	Dunn	Druid Training Consultants	NZ
Michael	Frampton	Gas and Petrochemical Industry Training Organisation	NZ

Jim	McCafferty	Gas and Petrochemical Industry Training Organisation	NZ
Roland	Proffitt	QualiSafe Management	NZ
Anthony	Salisbury	Gas and Petrochemical Industry Training Organisation	NZ
Alan	Bartlett	Alan Bartlett Consulting	QLD
Lisa	Bateson	Amber James Industrial Writing	QLD
Paaul	Brooks	Incitec	QLD
Andrew	Gray	Santos	QLD
John	Gresty	QFRA	QLD
Gavin	Henderson	Gavin Henderson Consulting	QLD
Paul	Hughes	Signet	QLD
Gordon	Johnson	Self	QLD
Terry	McGovern	Terry McGovern Pty Ltd	QLD
Carolyn	Paul	Incitec Ltd	QLD
Kevin	Wolff	Wolff Consulting	QLD
John	Albrecht	Penrice Soda	SA
Jim	Kesting	RPM Training	SA
Bob	Oglanby	PATDC	SA
Tom	Quigley	SA TAFE	SA
Lockie	Riley	Santos	SA
Robert	Summerton	PATDC	SA
Margaret	Thornton	Dept. of Education, Training and Employment	SA
Trevor	Whitelaw	Santos	SA
Malcolm	McIntosh	Manufacturing Learning South Australia	SA
Craig	Dandeaux	Pasminco Hobart Smelter	TAS
John	Glisson	NGT	TAS
Annette	Hennessy	Temco	TAS
Tom	Lever	NGT	TAS
John	Ahern	PPG	VIC
Gary	Armstrong	OTTE	VIC
Michael	Beresford	Rohm and Haas	VIC
Tina	Berghella	Oggi Consulting	VIC
Patrick	Boland	Gordon Institute of TAFE	VIC
Marvyn	Brown	Kodak	VIC
Susan	Camilleri	Symex Holdings Ltd	VIC
Rozalia	Cook	Victoria University	VIC
David	Edgington	Gordon Institute of TAFE	VIC
Robert	Ferrie	Mobil Oil Refinery	VIC
Peter	Furlong	Holmesglen Institute of TAFE	VIC
David	Gaulke	Box Hill Institute of TAFE	VIC
Tom	Gibson	Groundwork Development	VIC
Warren	Glover	Worksafe Victoria	VIC
Richard	Gorniakowski	Qenos	VIC
Dennis	Gossan	ExxonMobil	VIC
David	Graham	Huntsman Chemicals	VIC
Derek	Grantham	Cathay Pigments	VIC
Michael	Grout	Australian Vinyls	VIC

Steve	Hammond	Victoria University	VIC
Eddie	Hardman	ANTA	VIC
Eduard	Hoyer	Basell	VIC
John	Jarvis	ExxonMobil	VIC
Nick	Kantra	Holmesglen Institute of TAFE	VIC
Elspeth	King	Bendigo Regional Institute of TAFE	VIC
Trevor	Lange	Chisolm Institute	VIC
Adrian	Layh	PPG	VIC
Nicole	Lopes	Monsanto	VIC
Barbara	Marshall		VIC
Debbie	Martin	Red Alert Australia	VIC
Peter	McGinley	Dulux	VIC
Paul	McIntyre	ExxonMobil	VIC
Cheryl	McPhail	Cussons	VIC
Joy	Mitchell	MLV	VIC
John	Molenaar	MLV	VIC
Phillip	Murphy	Nufarm Australia	VIC
Pat	O'Flaherty	ADI	VIC
Carl	Phillips	AWU	VIC
Don	Potter	NUW/Qenos/Olefines Manufacturing	VIC
Bruce	Prescott	Holmesglen Institute of TAFE	VIC
John	Scott	OTTE	VIC
Graeme	Smith	Huntsman Chemicals	VIC
Alan	Stevenson	Chisolm Institute	VIC
Russell	Stewart	Mobil Oil Refinery	VIC
John	Temby	ADI Limited	VIC
Phillipa	Thomas-Walsh	Adnet Group	VIC
David	Tyler	Esso	VIC
Julie	Warren	NUW	VIC
Tim	Winter	Cussons	VIC
Ivor	Alexander	Apache Energy	WA
Frank	Aquino	Woodside	WA
Gary	Arcus	IFAP	WA
Liz	Baggetta	Millenium Inorganic Chem.	WA
Robert	Blay	Mobil Refining Australia Pty Ltd	WA
Andrew	Bolton	Coflexip Stena Offshore	WA
Ray	Brookes	Central TAFE	WA
Craig	Connor	Agility WA	WA
Frances	Coreless	Resource Personnel Svcs	WA
Claire	Davey	The Int Petroleum Schl	WA
Lina	Dickins	BHP Billiton	WA
Herlina	Dickins	BHP Billiton	WA
Dean	Edwards	Woodside Energy Ltd	WA
Garry	Eglinton	Woodside Energy Ltd	WA
Chris	French	Wesfarmers LPG	WA
Elsbeth	Geronimous	PACEA	WA
Geoffrey	Graham	Central TAFE	WA

Haydn	Gray	Phillips Petroleum	WA
Greg	Griffin	Woodside Energy Ltd	WA
Bruce	Harris	Woodside Energy Ltd	WA
Greg	Harrison	ChevronTexaco	WA
Glenn	Iles	ERG Training	WA
Chris	Jackson	Apache Energy	WA
Mike	Jakins	BP Oil	WA
Peter	Johnson	Newfield Exploration	WA
Bruce	Lake	Apache Energy	WA
David	Lesslie	Woodside Energy Ltd	WA
Margaret	Matthews	PACIA	WA
Charlie	McWattie	Phillips Petroleum	WA
Geof	Morgan	Wesfarmers LPG	WA
Tony	Morrison	BHP Billiton	WA
Tony	Neale	Woodside	WA
Terry	Obeirne	ChemCert WA Inc	WA
Ken	Raine	Dept of Environ. Protection	WA
Pamela	Richards	ChevronTexaco	WA
John	Robertson	Aust Competitive Energy	WA
Mark	Rush	Phillips Petroleum	WA
Tom	Russell	BHPB Petroleum	WA
Don	Sanders	APPEA Ltd	WA
Leng	Saw	Agilty Services (formerly AGL)	WA
Craig	Scarfe	Petromin Training & Performance Support Systems Pty Ltd	WA
John	Shand	Newfield	WA
Paul	Stevens	Apache Energy	WA
Leo	Verjans	WAPMITC	WA
Robin	Wright	Newfield Exploration	WA

Changes resulting from the review (Version 1)

General comments

PMA98 has been extensively reviewed. Most existing units have been carried forward. All units have been updated for changes which have occurred since their original drafting. The packaging rules are similar (although the format of the qualifications framework has changed to improve clarity).

Operations units now carry an additional element *control hazards* to reflect the changed OHS regulations in all States (and to some extent major hazard facility regulations).

Health, safety and environment units have all been rewritten. The original suite of OHS units was always problematic from both an industry alignment and an AQF alignment point of view. The new suite of OHS units better aligns with both the way jobs are done and the AQF. The environment units have also been rewritten to better align with the way jobs are done.

One issue raised in the Phase I review was the incorporation of units to do with the 'economics of the process'. Further investigation led to the existing quality units being modified to include this, rather than separate units being written.

Coding issues

PMA98 had some artificial demarcations within it due to the thinking which prevailed during its formulation. These artificial demarcations were also buried in the coding of the units. The intervening time between the development of PMA98 and the review had demonstrated that these demarcations were in fact artificial and served no purpose. As a result, the coding has been simplified to remove these artificial demarcations. This has resulted in there being two main groups of codes:

- OPS — for all operations units, regardless of their source
- SUP — for all other units.

The steering committee made two exceptions to this general rule and OHS and PER were also retained in the coding (for OHS and permit control units).

Assessment guidelines

PMA02 has adopted the DEST model assessment guidelines as required. The implementation of these will be similar to the existing assessment guidelines. These model guidelines have been customised by the addition of *Section 5 — Assessment in the chemical, hydrocarbons and oil refining industry.*

Qualifications framework

Packaging rules

The packaging rules for Certificates I to IV are similar. Additional qualifications have been created at AQF 5 and 6.

In addition, *Certificates in Process Support* have been created at AQF 1 — 3. These qualifications are for people working in the industry, but whose job does not required them to be competence in the range of operations competencies required by the existing qualifications. They are required to complete the same core units and the same total number of units, but do not have to select the minimum number of OPS units.

Transition arrangements

People with existing qualifications from PMA98 will still have that qualification recognised.

People who have some units of competency recognised (while not having a full qualification) should have the equivalent unit of competency in PMA02 granted and then be assessed for the relevant qualification under PMA02.

Units of competency

Most units of competency have been carried forward, although there may be changes to the title and code. Most units will have been updated.

Imported units

Wherever possible, existing units of competency from other endorsed Training Packages have been imported to PMA02. These units are reproduced in full, with the original codes of the source Training Package.

The most recent version of all imported units has been used, except for three units adopted for Certificates I, II and III from the superseded Business Services Training Package. This industry has elected to retain the following units for PMA02:

- BSATEM101A Participate in a team to achieve designated tasks
- BSATEM201A Participate in allocation and completion of team tasks
- BSATEM301A Negotiate with team members to allocate and complete tasks to achieve team goals.

Core in PMA02

Definition of core

Core units are those units which everyone in any sector of the industry must achieve competency in. Hence, the core (from AQF 2) is:

- PMASUP110A Relay and respond to information
- PMASUP120A Follow environmental work practices
- PMASUP100B Apply workplace procedures
- PMAOHS110B Respond to emergency situation
- PMAOHS200B Participate in workplace safety procedures

It should be noted that the core does not contain any 'technical' competencies which are also required, as these vary with sector and job within a sector.

Requirements for a qualification

To obtain a qualification (other than a Certificate in Process Support which is available at AQF 1 — 3 only), then competency must also be achieved in a minimum number of OPS units. These are the 'technical' units, but also include within them (both explicitly and implicitly) those 'non-technical' skills which are integral to the performance of that competency (such as communication, risk assessment, problem solving etc). This requires assessment of these supporting competencies in the context of their use.

Core at high levels

There are no additional core units above Certificate II. This is because competencies which may happen to be included in the core at Certificate II have now been integrated into the relevant OPS units which are required. The existing core is still required as:

- they represent the basic level that everyone is expected to function at in things like health and safety, environment, emergency response etc even though many will be operating at levels above this, as reflected in the specific units of competency
- it maximises the commonality of the outcome regardless of the entry point or pathway taken.

Summary

The core units of:

- PMASUP120A Follow environmental work practices
- PMASUP100B Apply workplace procedures

- PMAOHS110B Respond to emergency situation
- PMAOHS200B Participate in workplace safety procedures

underpin the basic level of competency which is frequently exceeded by later units of competency.

The core unit of *PMASUP110A Relay and respond to information* is basically redundant at the higher levels as relevant communication is implicitly and/or explicitly included in the relevant OPS units (and other SUP units). It has been retained in the core in recognition of the underlying importance of basic communication skills and to preserve the pattern established in lower qualifications.

Update of OHS content – November 2003

In 2003 the OHS content of selected units was reviewed in the context of the units being imported into the Manufactured Mineral Products Training Package (PMC04). The National Occupational, Health and Safety Commission (NOHSC) assisted in the review of the units and there is now a memorandum of understanding between DEST and NOHSC, enabling NOHSC to provide advice on OHS in Training Packages. This was not a requirement at the time of development of PMA02.

Twenty-four units were updated as a result of the review, with a version code change but no changes to workplace outcomes. Two new units were developed to replace three existing units.

Revised units

- PMAOHS100B Follow OHS procedures
- PMAOHS110B Respond to emergency situation
- PMAOHS200B Participate in workplace safety procedures
- PMAOHS300B Implement and monitor OHS policies and procedures for a workgroup
- PMAOHS400B Contribute to workplace OHS management system
- PMAOHS401B Assess risk
- PMAOHS510B Manage risk
- PMAOPS101B Read dials and indicators
- PMAOPS105B Select and prepare materials
- PMAOPS401B Trial new process/product
- PMAOPS520B Manage utilities
- PMAOPS521B Plan plant shutdown
- PMAOPS600B Modify plant
- PMAPER200C Work in accordance with an issued permit
- PMAPER201C Monitor and control work permits
- PMAPER205B Enter confined space
- PMAPER300C Issue work permits

- PMAPER302B Issue work permits (hot work/ confined space)
- PMASUP100B Apply workplace procedures
- PMASUP130B Follow established work plan
- PMASUP200B Implement production efficiencies
- PMASUP300B Identify and implement opportunities to maximise production efficiencies
- PMASUP330B Schedule production
- PMASUP441B Decommission plant

New units

- PMAOHS503A Maintain the workplace OHS management system

(this is a new unit based on a combination of PMAOHS500A Manage OHS management system and PMAOHS501A Evaluate and improve workplace OHS management system)

- PMAOHS601A Establish workplace OHS management system

(this is a new unit based on PMAOHS600A Ensure a safe workplace)

Key issues

NOHSC raised a number of issues with the PMA02 units, involving amendments to some descriptors and changes to Performance Criteria and Ranges of Variables. The changes related to expanding the underpinning knowledge and updating definitions and legislative/regulatory detail.

Rather than amend the units and recode as new units for PMC04, MLA felt it was essential for the PMA02 units to be upgraded to meet the NOHSC requirements for the following reasons:

recoding and amending the units would result in duplication as we are dealing with safety issues, it is important for the CHO sector that the PMA02 units be updated to take account of the NOHSC recommendations.

Qualifications

No changes.

Assessment guidelines

No changes.

Industry participants

The revised PMA02 units received the full support of industry and providers. The PMA02 Phase II Review steering committee was contacted and the Chair (David Graham, Huntsman Chemicals) agreed to oversee the process. A working party consisting of Wendy Davies (MLA), Kevin Hummel (Consultant) and Pam Pryor (NOHSC) was formed to review the units and make the necessary changes. Reviewers were provided with tracked changes so they could judge the changes against the previous version.

The following industry stakeholders were consulted:

Fay	Lamont	Nowra Chemicals	NSW
John	Jones	Shell Refining	NSW
Mike	McLeay	RTO (Private)	NSW
Carolyn	Paul	Consultant (previously Incitec)	QLD
Peter	Brock	Barrier Reef TAFE	QLD
Graeme	Frankham	Gladstone TAFE	QLD
Paul	Brooks	Incitec	QLD
Trevor	Whitelaw	Santos	SA
Carl	Phillips	AWU	VIC
David	Gaulke	Box Hill Institute	VIC
David	Graham	Huntsman Chemicals	VIC
Glen	Butterworth	Shell	VIC
John	Jarvis	Exxon Mobil (Esso)	VIC
Chris	Jackson	Apache Energy	WA
Frank	Aquino	Woodside Energy	WA
Gary	Acus	IFAP	WA
Geoff	Morgan	Wesfarmers LPG	WA
Glen	Iles	ERG Safety Training	WA
Haydn	Gray	Clough Engineering	WA
Lina	Dickens	ConocoPhillips	WA
Mike	Jakins	PMITC	WA
Tony	Morrison	BHP Petroleum	WA
Ashley	Hartley	Agility Training	WA

PMA02 Version 2 – June 2004

On/Offshore and Major Hazard Facility Incident Response (OMIR) units

Towards completion of the Phase II review of the Chemical, Hydrocarbons and Oil Refining Training Package (PMA02), a number of organisations in these industries raised concerns at the lack of competencies in PMA02 related to critical workplace incident response training needs. As this was beyond the scope of the review project, it was agreed that this should be investigated further by MLA.

In December 2002, with funding assistance from MLA, a scoping study was undertaken involving Woodside Energy in WA, Santos in SA, and Exxon Mobil, Huntsman Chemicals and Shell Oil in Victoria.

Two major issues were identified:

- there was agreement across the industries involved that appropriate incident response competencies were not available either in PMA02 or in the Public Safety emergency response units

- the units required were not simply to address responding to emergencies, but rather dealing with a workplace incident that could become an emergency if not dealt with effectively.

A number of common issues were raised in these discussions, the following three matters in particular:

- although there was a massive focus on safety and emergency response, workplace incident response training was not addressed in a consistent manner

- despite access to international standards (such as OPITO in the UK) and the considerable range of DEST endorsed units, organisations were still trying to write their own competencies to fill this need

- there was little understanding of the range of competencies required for a corporation to meet its broader obligations in the event of a major incident.

A Scoping Report was completed in December 2002, summarising the findings and recommending development of appropriate competencies. MLA subsequently sought funding from ANTA to develop a range of workplace incident response competencies for inclusion in PMA02 as support electives.

The project was approved in June 2003 and completed in April 2004, with delivery of the new units to ANTA for endorsement by the NTQC.

Qualifications

No changes.

Assessment Guidelines

No changes.

Industry participants

The project was overseen by a national steering committee, with representatives from the chemical, hydrocarbons and oil refining industries. The members and their constituencies are listed below:

Garry	Eglinton	Woodside Energy Ltd	Hydrocarbons
Glenn	Butterworth	Shell Refiniing (Aust) Pty Ltd	Oil refining
David	Graham	Huntsman Chemical Co	Chemicals
John	Jarvis	Exxon Mobil	Oil Refining
Trevor	Whitelaw	Santos Ltd	Hydrocarbons
Mike	Jakins	WAPMITC	WA ITAB
Carl	Phillips	AWU	Union

Because of the level of expertise of the members and the companies they represented, the committee also operated as a specialist advisory group for development and validation of the units.

The full PMA02 development database was kept advised of development and feedback was received from a wide range of stakeholders. The high level of interest and expertise from participants is gratefully acknowledged.

Gary	Hamilton	Caltex Aust	OIL	NSW
Shayne	Brown	Caltex, Kurnell	OIL	NSW
Graham	Attwood	Huntsman Chemicals	CHEM	NSW
Cliff	Ewing	Huntsman Chemicals	CHEM	NSW
Mike	McLeay	MD & Associates	RTO	NSW
Karen	Highfield	NOHSC	OHS	NSW
Fay	Lamont	Nowra Chemical Mfg P/L	CHEM	NSW
John J.	Lamont	Nowra Chemical Mfg P/L	CHEM	NSW
Rosalie	Straun	Nowra Chemical Mfg P/L	CHEM	NSW
Rachael	Little	Orica Explosives	CHEM	NSW
John	Sherlock	Origin Energy	HYD	NSW
Leanne	Reid	Qenos	CHEM	NSW
Colin	Sims	Qenos	CHEM	NSW
Garry	Fox	Qenos, Botany Industrial Park	CHEM	NSW
Robyn	Wosinski	Redox Chemicals Pty Ltd	CHEM	NSW
John	Jones	Shell Refinery	OIL	NSW
Greg	Martin	Shell Refining (Aust Pty Ltd	OIL	NSW
Michael	Van Den Bout	Shell Refining Clyde	OIL	NSW
John	Glover	Taubmans	CHEM	NSW
Alan	Bartlett	Alan Bartlett Consulting	RTO	QLD
Paul	Brooks	Incitec Pivot Limited	CHEM	QLD
Andrew	Gray	Santos	HYD	QLD
Kevin	Wolff	Wolff Consulting		QLD
Brenton	Hawtin	Mobil Oil Aust	HYD	SA
John	Sherlock	Origin Energy	HYD	SA

Andy	Holmes	Penrice	CHEM	SA
John	Albrecht	Penrice Soda	CHEM	SA
Trevor	Whitelaw	Santos	HYD	SA
Greg	Heinjus	Santos Ltd	HYD	SA
Craig	Harris	Santos Ltd.	HYD	SA
Annette	Hennessy	Temco	CHEM	TAS
Sue	Pennicuik	ACTU	UNION	VIC
Pat	O'Flaherty	ADI	CHEM	VIC
John	Temby	ADI Limited	CHEM	VIC
Carl	Phillips	AWU	Union	VIC
David	Gaulke	Box Hill Institute of TAFE	RTO	VIC
Bill	Walley	Box Hill Institute of TAFE	RTO	VIC
Richard	Gorniakowski	Brocklesby	CHEM	VIC
John	Jarvis	Exxon Mobil	HYD	VIC
Paul	McIntyre	Exxon Mobil	HYD	VIC
David	Graham	Huntsman Chemicals	CHEM	VIC
Graeme	Smith	Huntsman Chemicals	CHEM	VIC
John	Molenaar	MLV	ITAB	VIC
Robert	Ferrie	Mobil Oil Refinery	OIL	VIC
Phillip	Murphy	Nufarm Australia	CHEM	VIC
Judy	Douglas	Qenos	CHEM	VIC
Peter	Sharp	Qenos/Resins Manufacturing	CHEM	VIC
Gywnneth	Anderson	Red Alert Australia	RTO	VIC
Debbie	Martin	Red Alert Australia	RTO	VIC
Robert	Ackland	Shell Refinery	HYD	VIC
Susan	Camilleri	Symex Holdings Ltd	CHEM	VIC
Craig	Connor	Agility WA	HYD	WA
Chester	Church	Alcoa World Alumina Aust	Chem	WA
Aart	Terkuile	Alinta Gas	GAS	WA
Ivor	Alexander	Apache Energy	HYD	WA
Chris	Jackson	Apache Energy	HYD	WA
Bruce	Lake	Apache Energy	HYD	WA
Paul	Stevens	Apache Energy	HYD	WA
Don	Sanders	APPEA Ltd	HYD	WA
Tony	Morrison	BHP Billiton	HYD	WA
Ray	Nojeck	BHP Billiton	HYD	WA
Andy	Oliver	BHP Billiton Petroleum	HYD	WA
Tom	Russell	BHP Billiton Petroleum	HYD	WA
John	Robertson	Building Syllogism	HYD	WA
Ray	Brookes	Central TAFE	RTO	WA
Geoffrey	Graham	Central TAFE	RTO	WA
Jame	Carbojal	Chevron Texaco	HYD	WA
Ian	Templeton	Chevron Texaco	HYD	WA
Dai	Williams	Chevron Texaco	HYD	WA
Greg	Harrison	ChevronTexaco	HYD	WA
Pamela	Richards	ChevronTexaco	HYD	WA
Lina	Dickins	ConocoPhillips	HYD	WA
Charlie	McWattie	ConocoPhillips	HYD	WA
Liane	Lied-Cordruwisch	Coogee Chemicals	CHEM	WA
Grant	Robinson	Coogee Chemicals	HYD	WA

Stephen	Kamarudin	DOIR	GOVT	WA
Glenn	Iles	ERG Training	RTO	WA
Phil	Rolfe	FESA	RTO	WA
Rob	Galjaardt	HST Services	RTO	WA
Rick	Guy	Link Associates	RTO	WA
John	Landgridge	Link Associates	RTO	WA
Liz	Baggetta	Millenium Inorganic Chem.	CHEM	WA
Mary-Lou	Barry	Millenium InorganicChemicals	CHEM	WA
John	Shand	Newfield	HYD	WA
Peter	Johnson	Newfield Exploration	HYD	WA
Robin	Wright	Newfield Exploration	HYD	WA
Margaret	Matthews	PACIA	CHEM	WA
Mark	Rush	Phillips Petroleum	HYD	WA
Frances	Coreless	Resource Personnel Svcs	HYD	WA
Ray	Chittenden	Wesfarmers CSBP	CHEM	WA
Geof	Morgan	Wesfarmers LPG	HYD	WA
Peter	Wilson	Wesfarmers LPG	HYD	WA
Frank	Aquino	Woodside	HYD	WA
Suzzane	Giltrow	Woodside	HYD	WA
Tony	Neale	Woodside	HYD	WA
Dean	Edwards	Woodside Energy Ltd	HYD	WA
Garry	Eglinton	Woodside Energy Ltd	HYD	WA
Greg	Griffin	Woodside Energy Ltd	HYD	WA
Bruce	Harris	Woodside Energy Ltd	HYD	WA
David	Leslie	Woodside Energy Ltd	HYD	WA
Ian	Cahill	Worsley Alumina	CHEM	WA

PMA02 Version 3 – July 2006

New units for aluminium smelting

It was recognised in 2002 by learning and development people within Comalco that there were no suitable competencies available to cover the specialised operational work performed in the aluminium smelting sector. At this time, an enterprise project was initiated to develop suitable units for production operators working in this area.

The resulting draft competency units were reviewed and revised by the Queensland Process Manufacturing ITB, with a view to having them included as electives in the Chemical, Hydrocarbons & Oil Refining Training Package (PMA02). Mid 2005, these draft units were referred to Manufacturing Skills Australia for advice on how to have them endorsed and incorporated as electives into PMA02.

In October 2005, MSA contracted Total Training and Performance Solutions to:

- analyse and review the draft units with industry stakeholders and with relevant RTOs and assess how the units could be incorporated into PMA02
- redevelop as required and validate with stakeholders.

An initial investigation of the process of smelting aluminium was undertaken and confirmed with industry experts. The smelting process was then analysed in terms of which aspects of the job could be covered by existing units of competency and which areas required new units of competency. The results of this analysis were also confirmed with industry experts.

During December 2005, a revised set of new units of competency to fill the gaps identified were then drafted, with input from industry experts. Validation was undertaken through February/March 2006. Emphasis was placed on ensuring feedback was received from smelters in different States and with different ownership to ensure possible differences in technology and language were covered. Consultation and validation for this project has occurred across the major ownership groups.

The units were submitted to DEST for endorsement by the NQC in April 2006.

Qualifications

No changes.

Assessment Guidelines

No changes.

Industry participants

The project was managed by Barbara Wallace, MSA Industry Coordinator and was overseen by the Process Manufacturing Industry Advisory Committee, which includes the following representatives from the sectors covered by PMA02:

David Graham, Employee Development Manager, Huntsman Chemical Co
Don Sanders, Director, Australian Petroleum Production & Exploration Assoc
Alan Bugg, AWU representative (Huntsman Chemical Co)
Vince Lloyd, AWU representative (Qenos)

The following people were involved in development and review of the new units of competency:

Contact	Organisation
Malcolm Campbell	Consultant, QMITB
Terri Pienaar	Boyne Smelter Ltd, Qld
Anne Porter	Boyne Smelter Ltd, Qld
Warren Dredge	Boyne Smelter Ltd, Qld
Johan Peenz	Boyne Smelter Ltd, Qld
Roger Cater	QPMITB & Qld Chemicals ITC
Ron North	Qld DET
Brett Noonan	Alcoa Point Henry, Vic
Andrew Morphett	Alcoa Point Henry, Vic
Bob Bryden	In-Train
Karen Porter	Project Officer, Gladstone TAFE
Stuart Hansford	Learning & Development Specialist, Comalco, Qld

Mapping between PMA98 and PMA02

Mapping of PMA98 to PMA02

The following mapping, in PMA98 code order, shows the revised unit which replaces the existing unit.
The next section maps PMA02 to PMA98 showing all units in PMA02

PMA98		PMA02		Comment
Code	**Unit title**	**Code**	**Unit title**	
BSATEM101A	Participate in team to achieve designated goals	BSATEM101A	Participate in team to achieve designated goals	no change
BSATEM201A	Participate in the allocation and completion of team tasks	BSATEM201A	Participate in the allocation and completion of team tasks	no change
BSATEM301A	Negotiate with team members to allocate and complete tasks	BSATEM301A	Negotiate with team members to allocate and complete tasks	no change
BSX0008/1, BSX0008/2 BSX0008/3	Prepare for, deliver and review training	BSZ404A	Train small groups	revised national standards
BSX0008/4	Workplace trainer category 2	BSZ404A	Train small groups	revised national standards
BSX0022/2	Workplace assessor	BSZ401A, BSZ402A, BSZ403A	Plan, conduct, review assessment	revised national standards
BSXFMI303A	Establish and manage effective workplace relationships			not imported
BSXFMI304A	Participate in, lead and facilitate work teams			not imported

PMA98		PMA02		Comment
Code	**Unit title**	**Code**	**Unit title**	
BSXFMI305A	Manage operations to achieve planned outcomes			not imported
BSXFMI310A	Facilitate and capitalise on change and innovation			not imported
BSXFMI311A	Contribute to the development of a workplace learning environment			not imported
ICPIM31CA	Manufacture inks/coatings			not imported. Refer new (non equivalent) units: PMAOPS350A Match and adjust colour PMAOPS450A Solve colour problems PMAOPS550A Develop a colour formulation
PMACOM100A	Relay and respond to information	PMASUP110A	Relay and respond to information	no change
PMACOM200A	Process and record information	PMASUP210A	Process and record information	no change
PMACOM300A	Contribute to the development of plant documentation	PMASUP410A	Develop plant documentation	equivalent but realigned
PMAENV100A	Identify and minimise environmental hazards	PMASUP120A	Follow environmental work practices	replacement unit but not equivalent
PMAENV200A	Monitor and control environmental hazards	PMASUP220A	Monitor and control environmental hazards	replacement unit but not equivalent
PMAENV300A	Minimise environmental impact of process	PMASUP420A	Minimise environmental impact of process	equivalent but realigned
PMAFA200A	Provide first aid	PMAOHS220A	Provide initial first aid response	replacement unit but not equivalent

PMA98		PMA02		Comment
Code	**Unit title**	**Code**	**Unit title**	
PMAHAZ200A	Respond to an emergency situation	PMAOHS110B	Respond to emergency situation	basic replacement unit but not equivalent
		PMAOHS210B	Undertake first response to non-fire incidents	specific replacement unit but not equivalent
		PMAOHS212B	Undertake first response to fire incidents	specific replacement unit but not equivalent
PMAHAZ201A	Prepare equipment for emergency response	PMAOHS211A	Prepare equipment for emergency response	no change
PMAHYD200A	Operate and monitor production/processing equipment	PMAOPS200A	Operate and monitor an item of equipment	similar in outcome but with the addition of control hazards
PMAHYD201A	Operate and monitor prime movers	PMAOPS221A	Operate and monitor prime movers	similar in outcome but with the addition of control hazards
PMAHYD202A	Operate and monitor pumping systems and equipment	PMAOPS222A	Operate and monitor pumping systems and equipment	similar in outcome but with the addition of control hazards
PMAHYD203A	Operate and monitor valve systems	PMAOPS223A	Operate and monitor valve systems	similar in outcome but with the addition of control hazards
PMAHYD204A	Operate and monitor process support systems	PMAOPS224A	Provide fluids for utilities and support	replacement unit but not equivalent
PMAHYD205A	Enter confined space	PMAPER205B	Enter confined space	replacement unit but not equivalent to align with standard
PMAHYD206A	Monitor water and fire water systems	PMAOPS224A	Provide fluids for utilities and support	replacement unit but not equivalent
PMAHYD207A	Undertake first response to fire incidents	PMAOHS212B	Undertake first response to fire incidents	equivalent but not identical units
PMAHYD208A	Undertake fire control and emergency rescue	PMAOHS213A	Undertake fire control and emergency rescue	no change
PMAHYD209A	Monitor the permit to work	PMAPER201C	Monitor and control work permits	equivalent but not identical units

PMA98		PMA02		Comment
Code	**Unit title**	**Code**	**Unit title**	
PMAHYD210A	Undertake helicopter safety and escape	PMAOHS214A	Undertake helicopter safety and escape	replacement unit but not equivalent
PMAHYD211A	Apply sea survival techniques	PMAOHS215A	Apply offshore facility abandonment and sea survival procedures	replacement unit but not equivalent
PMAHYD230A	Operate, monitor and maintain pipeline facilities and equipment	PMAOPS230A	Monitor, operate and maintain pipeline stations and equipment	equivalent but not identical units
PMAHYD231A	Control gas odourisation	PMAOPS231A	Control gas odourisation	equivalent but not identical units
PMAHYD232A	Maintain pipeline easements	PMASUP241A	Maintain pipeline easements	similar in outcome but with the addition of control hazards and respond to problems
PMAHYD233A	Monitor pipeline civil works	PMASUP242A	Monitor pipeline civil works	similar in outcome but with the addition of control hazards
PMAHYD234A	Install cathodic protection systems and equipment			replaced by PMASUP343 which supervises this activity which better aligns with the operator job.
PMAHYD235A	Coat pipelines	PMASUP243A	Monitor and maintain pipeline coatings	equivalent but not identical units
PMAHYD236A	Operate vehicles in the field	PMASUP236A	Operate vehicles in the field	replacement unit but not equivalent
PMAHYD237A	Undertake crane, dogging and load transfer operations	PMASUP237A	Undertake crane, dogging and load transfer operations	similar in outcome but with the addition of control hazards and respond to problems
PMAHYD238A	Undertake first response to pipeline incidents	PMAOHS210B	Undertake first response to non-fire incidents	This unit has been split into OHS210 and 212

PMA98		PMA02		Comment
Code	**Unit title**	**Code**	**Unit title**	
		PMAOHS212B	Undertake first response to fire incidents	
PMAHYD300A	Conduct artificial lift	PMAOPS320A	Conduct artificial lift	similar in outcome but with the addition of control hazards and respond to problems
PMAHYD301A	Undertake well management	PMAOPS321A	Undertake well management	similar in outcome but with the addition of control hazards and respond to problems
PMAHYD302A	Monitor and operate fire and gas detection systems			This unit has been replaced by OHS 210 and 212
PMAHYD303A	Operate process control systems	PMAOPS305A	Operate process control systems	similar in outcome but with the addition of control hazards and respond to problems
PMAHYD304A	Correct product deviations			this has been merged with other relevant OPS units
PMAHYD305A	Generate electrical power	PMAOPS325A	Generate electrical power	similar in outcome but with the addition of control hazards and respond to problems
PMAHYD306A	Produce product (1) — gas absorption	PMAOPS326A	Produce product using gas absorption	similar in outcome but with the addition of control hazards and respond to problems
PMAHYD307A	Produce product (2) — dehydration	PMAOPS327A	Produce product using fixed bed dehydration	similar in outcome but with the addition of control hazards and respond to problems
PMAHYD308A	Produce product (3) — distillation	PMAOPS301A	Produce products by distillation	similar in outcome but with the addition of control hazards and respond to problems

PMA98		PMA02		Comment
Code	**Unit title**	**Code**	**Unit title**	
PMAHYD309A	Produce product (4) — liquid extraction	PMAOPS329A	Produce product using liquid extraction	similar in outcome but with the addition of control hazards and respond to problems
PMAHYD310A	Produce product (5) — filtration	PMAOPS232A	Produce product by filtration	this unit has been realigned. similar in outcome but with the addition of control hazards and respond to problems
PMAHYD311A	Undertake storage, loading and transfer of product	PMAOPS307A	Transfer bulk fluids into/out of storage facility	similar in outcome but with the addition of control hazards and respond to problems
PMAHYD312A	Undertake ship loading/unloading operations	PMAOPS312A	Undertake ship loading/unloading operations	similar in outcome but with the addition of control hazards and respond to problems
PMAHYD313A	Store and transfer bulk product	PMAOPS307A	Transfer bulk fluids into/out of storage facility	similar in outcome but with the addition of control hazards and respond to problems
PMAHYD314A	Operate and monitor compressor systems and equipment	PMAOPS304A	Operate and monitor compressor systems and equipment	similar in outcome but with the addition of control hazards and respond to problems
PMAHYD315A	Lead fire emergency teams	PMAOHS311A	Lead emergency teams	similar except also applies to non-fire incidents
PMAHYD316A	Command the operation of survival craft	PMAOHS312A	Command the operation of survival craft	similar in outcome but with the addition of control hazards and respond to problems
PMAHYD330A	Communicate pipeline control centre operations	PMAOPS330A	Communicate pipeline control centre operations	similar in outcome but with the addition of control hazards and respond to problems

PMA98		PMA02		Comment
Code	**Unit title**	**Code**	**Unit title**	
PMAHYD331A	Conduct pipeline pigging	PMASUP340A	Conduct pipeline pigging	similar in outcome but with the addition of control hazards and respond to problems
PMAHYD332A	Monitor and maintain instrument and control systems	PMASUP341A	Monitor and maintain instrument and control systems	no change
PMAHYD333A	Monitor and maintain electrical systems	PMASUP342A	Monitor and maintain electrical systems	no change
PMAHYD334A	Monitor and maintain pipeline cathodic protection systems	PMASUP343A	Monitor and maintain cathodic protection systems	similar in outcome but with the addition of control hazards and respond to problems
PMAHYD335A	Weld and cut operational pipeline	PMASUP344A	Monitor and control repairs and modifications on operational pipe	changed to better reflect the supervisory nature of the role merged with HYD336
PMAHYD336A	Undertake pipeline repairs and modifications	PMASUP344A	Monitor and control repairs and modifications on operational pipe	changed to better reflect the supervisory nature of the role merged with HYD335
PMAHYD337A	Apply health, safety and environmental rules and regulations in the workplace			all existing safety units have been withdrawn and replaced.
PMAHYD400A	Monitor treatment facilities, operations and stations	PMAOPS410A	Monitor remote production facilities	similar in outcome but with the addition of control hazards and respond to problems
PMAHYD401A	Manage plant shutdown and restart	PMAOPS411A	Manage plant shutdown and restart	no change
PMAHYD402A	Undertake incident control	PMAOHS410B	Manage emergency incidents	equivalent — merged with HYD431
PMAHYD431A	Manage pipeline emergencies	PMAOHS410B	Manage emergency incidents	equivalent — merged with HYD402

PMA98		PMA02		Comment
Code	**Unit title**	**Code**	**Unit title**	
PMAHYD432A	Coordinate pipeline projects	PMASUP432A	Coordinate pipeline projects	no change
PMAHYD433A	Commission/decommission pipelines	PMASUP440A	Commission/recommission plant	equivalent but not identical units
PMAMAIN201A	Undertake minor maintenance	PMASUP240A	Undertake minor maintenance	no change
PMAMAIN400A	Commission/recommission plant	PMASUP440A	Commission/recommission plant	equivalent but not identical units
PMAMAIN401A	Decommission plant	PMASUP441B	Decommission plant	equivalent but not identical units
PMAOHS100A	Follow OHS policies and procedures	PMAOHS100C	Follow OHS procedures	all existing safety units have been withdrawn and replaced.
		PMAOHS200B	Participate in workplace safety procedures	all existing safety units have been withdrawn and replaced.
PMAOHS200A	Implement and monitor OHS policies and procedures	PMAOHS300B	Implement and monitor OHS policies and procedures for a workgroup	all existing safety units have been withdrawn and replaced.
PMAOHS400A	Establish, maintain and evaluate an OHS system			all existing safety units have been withdrawn and replaced.
PMAPER200A	Work in accordance with an issued permit	PMAPER200C	Work in accordance with an issued permit	equivalent but not identical units
PMAPER300A	Issue work permits	PMAPER300C	Issue work permits	similar but now excludes hot work and confined space entry
PMAPER301A	Monitor and control work permits	PMAPER201C	Monitor and control work permits	similar, has been realigned
PMAPLAN100A	Follow established work plan	PMASUP130B	Follow established work plan	no change
PMAPLAN300A	Schedule production	PMASUP330B	Schedule production	no change
PMAPROC100A	Apply procedures to equipment operation	PMAOPS100A	Use equipment to procedures	similar in outcome but with the addition of control hazards
PMAPROC101A	Make measurements	PMAOPS101B	Read dials and indicators	similar in outcome but with the addition of control hazards

PMA98		PMA02		Comment
Code	**Unit title**	**Code**	**Unit title**	
PMAPROC102A	Undertake housekeeping operations	PMAOPS102A	Undertake housekeeping operations	similar in outcome but with the addition of control hazards
PMAPROC103A	Select and assemble materials	PMAOPS105B	Select and prepare materials	merged with PROC104, controlling hazards added
PMAPROC104A	Prepare materials for production	PMAOPS105B	Select and prepare materials	merged with PROC103, controlling hazards added
PMAPROC200A	Operate an item of equipment	PMAOPS200A	Operate and monitor an item of equipment	similar in outcome but with the addition of control hazards and respond to problems
PMAPROC201A	Operate fluid flow equipment	PMAOPS201A	Operate fluid flow equipment	similar in outcome but with the addition of control hazards
PMAPROC202A	Operate fluid mixing equipment	PMAOPS202A	Operate fluid mixing equipment	similar in outcome but with the addition of control hazards
PMAPROC203A	Handle goods	PMAOPS203A	Handle goods	similar in outcome but with the addition of control hazards and respond to problems
PMAPROC204A	Use utilities and services	PMAOPS204A	Use utilities and services	similar in outcome but with the addition of control hazards
PMAPROC205A	Operate heat exchangers	PMAOPS205A	Operate heat exchangers	similar in outcome but with the addition of control hazards
PMAPROC206A	Operate separation equipment	PMAOPS206A	Operate separation equipment	similar in outcome but with the addition of control hazards
PMAPROC207A	Operate powered separation equipment	PMAOPS207A	Operate powered separation equipment	similar in outcome but with the addition of control hazards
PMAPROC208A	Operate chemical separation equipment	PMAOPS208A	Operate chemical separation equipment	similar in outcome but with the addition of control hazards

PMA98		PMA02		Comment
Code	**Unit title**	**Code**	**Unit title**	
PMAPROC210A	Operate particulates handling equipment	PMAOPS210A	Operate particulates handling equipment	similar in outcome but with the addition of control hazards and respond to problems
PMAPROC211A	Operate manufacturing extruders	PMAOPS211A	Operate manufacturing extruders	similar in outcome but with the addition of control hazards and respond to problems
PMAPROC213A	Package product/material	PMAOPS213A	Package product/material	similar in outcome but with the addition of control hazards and respond to problems
PMAPROC300A	Operate a production unit	PMAOPS300A	Operate a production unit	similar in outcome but with the addition of control hazards and respond to problems
PMAPROC301A	Operate distillation units	PMAOPS301A	Produce products by distillation	similar in outcome but with the addition of control hazards and respond to problems
PMAPROC302A	Operate reactors and reaction equipment	PMAOPS302A	Operate reactors and reaction equipment	similar in outcome but with the addition of control hazards and respond to problems
PMAPROC303A	Operate furnaces	PMAOPS303A	Operate furnaces	similar in outcome but with the addition of control hazards and respond to problems
PMAPROC304A	Operate compressors	PMAOPS304A	Operate and monitor compressor systems and equipment	similar in outcome but with the addition of control hazards and respond to problems
PMAPROC305A	Operate process control systems	PMAOPS305A	Operate process control systems	similar in outcome but with the addition of control hazards and respond to problems

PMA98		PMA02		Comment
Code	**Unit title**	**Code**	**Unit title**	
PMAPROC307A	Undertake tank-farming operations	PMAOPS307A	Transfer bulk fluids into/out of storage facility	similar in outcome but with the addition of control hazards and respond to problems
PMAPROC400A	Optimise operating systems	PMAOPS400A	Optimise operating systems	same intent, but wording modified to better reflect this and the alignment
PMAPROC401A	Trial new process/product	PMAOPS401B	Trial new process/product	some wording changes but equivalent.
PMAQUAL100A	Contribute to Quality Processes	PMASUP100B	Apply workplace procedures	replacement unit but not equivalent
PMAQUAL200A	Apply quality processes	PMASUP200B	Implement production efficiencies	replacement unit but not equivalent
PMAQUAL300A	Initiate continuous improvement	PMASUP300B	Identify and implement opportunities to maximise production efficiencies	replacement unit but not equivalent
PMAQUAL400A	Develop and monitor quality systems			merged into SUP410
PMATEST200A	Collect and prepare standard samples	PMCSUP292A	Sample and test materials and product	may be regarded as equivalent
PMATEST201A	Perform qualitative and quantitative tests	PMCSUP292A	Sample and test materials and product	merged into SUP292, alternatively see PMLTEST300A Perform basic tests
PMATEST202A	Operate laboratory equipment and instruments	PMCSUP292A	Sample and test materials and product	merged into SUP292, alternatively see PMLTEST300A Perform basic tests

PMA98		PMA02		Comment
Code	**Unit title**	**Code**	**Unit title**	
TDTA17A	Organise work operations	PMAOPS308A	Organise storage and logistics of general materials	this has been rewritten to better fit this industry's requirements
TDTD10A	Operate a forklift	TDTD1097B	Operate a forklift	an updated unit which now aligns with the forklift 'ticket' requirements
TDTD1A	Shift materials safely			merged into general safety units ie this is one of the hazards of doing the job — see OHS100 or 200.
TDTK12A	Use infotechnology devices in the workplace	PMAOPS212A	Use enterprise data system	this has been rewritten to better fit this industry's requirements
UTUNEG162A	Operate and monitor boiler steam/water cycle	UTPNEG162A	Operate and monitor boiler steam/water cycle	updated, equivalent unit
UTUNEG210A	Manage, operate and monitor turbine	UTPNEG210A	Manage, operate and monitor turbine	updated, equivalent unit

List of units in PMA02 V3 and mapping to PMA98

The following table list all units in PMA02, in code order and maps them to PMA98 units.

PMA02 V3 code	Unit title	PMA98 code	Unit title	Comment
BSATEM101A	Participate in team to achieve designated goals	BSATEM101A	Participate in team to achieve designated goals	no change
BSATEM201A	Participate in the allocation and completion of team tasks	BSATEM201A	Participate in the allocation and completion of team tasks	no change
BSATEM301A	Negotiate with team members to allocate and complete tasks	BSATEM301A	Negotiate with team members to allocate and complete tasks	no change
BSBCMN402A	Develop work priorities			
BSBCMN404A	Develop teams and individuals			
BSBCMN410A	Coordinate implementation of customer service strategies			
BSBCMN412A	Promote innovation and change			
BSBFLM402A	Show leadership in the workplace			
BSBFLM403A	Manage effective workplace relationships			
BSBFLM404A	Lead work teams			
BSBFLM405A	Implement operational plan			
BSBFLM406A	Implement workplace information system			
BSBFLM409A	Implement continuous improvement			
BSBFLM504A	Facilitate work teams			
BSBFLM505A	Manage operational plan			
BSBFLM509A	Promote continuous improvement			

PMA02 V3 code	Unit title	PMA98 code	Unit title	Comment
BSBFLM510A	Facilitate and capitalise on change and innovation			
BSBFLM511A	Develop a workplace learning environment			
BSZ401A BSZ402A BSZ403A	Plan, conduct, review assessment	BSX0022/2	Workplace assessor	revised national standards
BSZ404A	Train small groups	BSX0008/1, 2 /3 & 4	Prepare for, deliver and review training Workplace trainer category 2	revised national standards
PMAOHS100C	Follow OHS procedures	PMAOHS100A	Follow OHS policies and procedures	all existing safety units have been withdrawn and replaced.
PMAOHS110B	Respond to emergency situation	PMAHAZ200A	Respond to an emergency situation	basic replacement unit but not equivalent
PMAOHS200B	Participate in workplace safety procedures			all existing safety units have been withdrawn and replaced.
PMAOHS210B	Undertake first response to non-fire incidents	PMAHYD238A	Undertake first response to pipeline incidents	This unit has been split into OHS210 and 212
PMAOHS211A	Prepare equipment for emergency response	PMAHAZ201A	Prepare equipment for emergency response	no change
PMAOHS212B	Undertake first response to fire incidents	PMAHYD207A	Undertake first response to fire incidents	equivalent but not identical units
PMAOHS213A	Undertake fire control and emergency rescue	PMAHYD208A	Undertake fire control and emergency rescue	no change
PMAOHS214A	Undertake helicopter safety and escape	PMAHYD210A	Undertake helicopter safety and escape	replacement unit but not equivalent
PMAOHS215A	Apply offshore facility abandonment and sea survival procedures	PMAHYD211A	Apply sea survival techniques	replacement unit but not equivalent

PMA02 V3 code	Unit title	PMA98 code	Unit title	Comment
PMAOHS216B	Operate breathing apparatus			
~~PMAOHS217A~~ *replaced by PMAOMIR217A*	~~Monitor hazardous atmospheres~~			
PMAOHS220A	Provide initial first aid response	PMAFA200A	Provide first aid	replacement unit but not equivalent
PMAOHS221A	Maintain first aid supplies and records			
PMAOHS300B	Implement and monitor OHS policies and procedures for a workgroup	PMAOHS200A	Implement and monitor OHS policies and procedures	all existing safety units have been withdrawn and replaced.
PMAOHS310A	Investigate incidents			
PMAOHS311A	Lead emergency teams	PMAHYD315A	Lead fire emergency teams	similar except also applies to non-fire incidents
PMAOHS312A	Command the operation of survival craft	PMAHYD316A	Command the operation of survival craft	similar in outcome but with the addition of control hazards and respond to problems
PMAOHS320B	Provide advanced first aid response			
PMAOHS321A	Provide first aid response in remote and/or isolated area			
PMAOHS400B	Contribute to workplace OHS management system			
PMAOHS401B	Assess risk			
PMAOHS410B	Manage emergency incidents	PMAHYD402A PMAHYD431A	Undertake incident control Manage pipeline emergencies	equivalent — merged with HYD431 equivalent — merged with HYD402

PMA02 V3 code	Unit title	PMA98 code	Unit title	Comment
PMAOHS420A	Develop first aid procedures and manage resources			
~~PMAOHS500A~~ *Replaced by PMAOHS503A*	~~Manage workplace OHS management system~~			
~~PMAOHS501A~~ *Replaced by PMAOHS503A*	~~Evaluate and improve workplace OHS management system~~			
PMAOHS503A	Maintain workplace OHS management system			
PMAOHS502A	Contribute to safety case			
PMAOHS510B	Manage risk			
~~PMAOHS600A~~ *Replaced by PMAOHS601A*	~~Ensure a safe workplace~~			
PMAOHS601A	Establish workplace OHS management system			
PMAOMIR205A	Control minor incidents			
PMAOMIR210A	Control evacuation to muster point			
PMAOMIR217A	Gas test atmospheres *(replaces PMAOSH217A Monitor Hazardous Atmospheres)*			
PMAOMIR301A	Undertake initial rescue			
PMAOMIR302A	Respond to a helideck incident			
PMAOMIR317A	Facilitate search and rescue operations			
PMAOMIR320A	Manage incident response information			

PMA02 V3 code	Unit title	PMA98 code	Unit title	Comment
PMAOMIR321A	Manage communication systems during an incident			
PMAOMIR346A	Assess and secure an incident site			
PMAOMIR407A	Audit incident preparedness and established response system			
PMAOMIR418A	Coordinate incident response			
PMAOMIR424A	Develop and maintain community relationships			
PMAOMIR430A	Conduct and assess incident exercises			
PMAOMIR444A	Develop incident containment tactics			
PMAOMIR449A	Monitor legal compliance obligations during incidents			
PMAOMIR512A	Establish incident response preparedness and response systems			
PMAOMIR523A	Manage corporate media requirements in a crisis			
PMAOMIR575A	Coordinate welfare support activities in response to an incident			
PMAOMIR622A	Build partnerships to improve incident response capacity			
PMAOMIR650A	Manage a crisis			
PMAOPS100A	Use equipment to procedures	PMAPROC100A	Apply procedures to equipment operation	similar in outcome but with the addition of control hazards
PMAOPS101B	Read dials and indicators	PMAPROC101A	Make measurements	similar in outcome but with the addition of control hazards

PMA02 V3 code	Unit title	PMA98 code	Unit title	Comment
PMAOPS102A	Undertake housekeeping operations	PMAPROC102A	Undertake housekeeping operations	similar in outcome but with the addition of control hazards
PMAOPS105B	Select and prepare materials	PMAPROC103A PMAPROC104A	Select and assemble materials Prepare materials for production	merged with PROC104, controlling hazards added merged with PROC103, controlling hazards added
PMAOPS200A	Operate and monitor an item of equipment	PMAHYD200A PMAPROC200A	Operate and monitor production/processing equipment Operate an item of equipment	similar in outcome but with the addition of control hazards similar in outcome but with the addition of control hazards and respond to problems
PMAOPS201A	Operate fluid flow equipment	PMAPROC201A	Operate fluid flow equipment	similar in outcome but with the addition of control hazards
PMAOPS202A	Operate fluid mixing equipment	PMAPROC202A	Operate fluid mixing equipment	similar in outcome but with the addition of control hazards
PMAOPS203A	Handle goods	PMAPROC203A	Handle goods	similar in outcome but with the addition of control hazards and respond to problems
PMAOPS204A	Use utilities and services	PMAPROC204A	Use utilities and services	similar in outcome but with the addition of control hazards
PMAOPS205A	Operate heat exchangers	PMAPROC205A	Operate heat exchangers	similar in outcome but with the addition of control hazards
PMAOPS206A	Operate separation equipment	PMAPROC206A	Operate separation equipment	similar in outcome but with the addition of control hazards
PMAOPS207A	Operate powered separation equipment	PMAPROC207A	Operate powered separation equipment	similar in outcome but with the addition of control hazards
PMAOPS208A	Operate chemical separation equipment	PMAPROC208A	Operate chemical separation equipment	similar in outcome but with the addition of control hazards

PMA02 V3 code	Unit title	PMA98 code	Unit title	Comment
PMAOPS210A	Operate particulates handling equipment	PMAPROC210A	Operate particulates handling equipment	similar in outcome but with the addition of control hazards and respond to problems
PMAOPS211A	Operate manufacturing extruders	PMAPROC211A	Operate manufacturing extruders	similar in outcome but with the addition of control hazards and respond to problems
PMAOPS212A	Use enterprise data system	TDTK12A	Use infotechnology devices in the workplace	this has been rewritten to better fit this industry's requirements
PMAOPS213A	Package product/material	PMAPROC213A	Package product/material	similar in outcome but with the addition of control hazards and respond to problems
PMAOPS216A	Operate local control system			
PMAOPS217A	Operate wet milling equipment			
PMAOPS220A	Monitor chemical reactions in the process			
PMAOPS221A	Operate and monitor prime movers	PMAHYD201A	Operate and monitor prime movers	similar in outcome but with the addition of control hazards
PMAOPS222A	Operate and monitor pumping systems and equipment	PMAHYD202A	Operate and monitor pumping systems and equipment	similar in outcome but with the addition of control hazards
PMAOPS223A	Operate and monitor valve systems	PMAHYD203A	Operate and monitor valve systems	similar in outcome but with the addition of control hazards
PMAOPS224A	Provide fluids for utilities and support	PMAHYD204A PMAHYD206A	Operate and monitor process support systems Monitor water and fire water systems	replacement unit but not equivalent replacement unit but not equivalent
PMAOPS230A	Monitor, operate and maintain pipeline stations and equipment	PMAHYD230A	Operate, monitor and maintain pipeline facilities and equipt	equivalent but not identical units
PMAOPS231A	Control gas odourisation	PMAHYD231A	Control gas odourisation	equivalent but not identical units

PMA02 V3 code	Unit title	PMA98 code	Unit title	Comment
PMAOPS232A	Produce product by filtration	PMAHYD310A	Produce product (5) — filtration	this unit has been realigned. Similar in outcome but with the addition of control hazards and respond to problems
PMAOPS240A	Store liquids in bulk			
PMAOPS290A	Operate a biotreater			
PMAOPS300A	Operate a production unit	PMAPROC300A	Operate a production unit	similar in outcome but with the addition of control hazards and respond to problems
PMAOPS301A	Produce products by distillation	PMAHYD308A PMAPROC301A	Produce product (3) — distillation Operate distillation units	similar in outcome but with the addition of control hazards and respond to problems similar in outcome but with the addition of control hazards and respond to problems
PMAOPS302A	Operate reactors and reaction equipment	PMAPROC302A	Operate reactors and reaction equipment	similar in outcome but with the addition of control hazards and respond to problems
PMAOPS303A	Operate furnaces	PMAPROC303A	Operate furnaces	similar in outcome but with the addition of control hazards and respond to problems
PMAOPS304A	Operate and monitor compressor systems and equipment	PMAHYD314A PMAPROC304A	Operate and monitor compressor systems and equipment Operate compressors	similar in outcome but with the addition of control hazards and respond to problems similar in outcome but with the addition of control hazards and respond to problems

PMA02 V3 code	Unit title	PMA98 code	Unit title	Comment
PMAOPS305A	Operate process control systems	PMAHYD303A	Operate process control systems	similar in outcome but with the addition of control hazards and respond to problems
		PMAPROC305A	Operate process control systems	similar in outcome but with the addition of control hazards and respond to problems
PMAOPS307A	Transfer bulk fluids into/out of storage facility	PMAHYD311A	Undertake storage, loading and transfer of product	similar in outcome but with the addition of control hazards and respond to problems
		PMAHYD313A	Store and transfer bulk product	similar in outcome but with the addition of control hazards and respond to problems
		PMAPROC307A	Undertake tank-farming operations	similar in outcome but with the addition of control hazards and respond to problems
PMAOPS308A	Organise storage and logistics of general materials	TDTA17A	Organise work operations	this has been rewritten to better fit this industry's requirements
PMAOPS309A	Operate particulates handling/ storage equipment			
PMAOPS312A	Undertake ship loading/unloading operations	PMAHYD312A	Undertake ship loading/unloading operations	similar in outcome but with the addition of control hazards and respond to problems
PMAOPS320A	Conduct artificial lift	PMAHYD300A	Conduct artificial lift	similar in outcome but with the addition of control hazards and respond to problems
PMAOPS321A	Undertake well management	PMAHYD301A	Undertake well management	similar in outcome but with the addition of control hazards and respond to problems

PMA02 V3 code	Unit title	PMA98 code	Unit title	Comment
PMAOPS325A	Generate electrical power	PMAHYD305A	Generate electrical power	similar in outcome but with the addition of control hazards and respond to problems
PMAOPS326A	Produce product using gas absorption	PMAHYD306A	Produce product (1) — gas absorption	similar in outcome but with the addition of control hazards and respond to problems
PMAOPS327A	Produce product using fixed bed dehydration	PMAHYD307A	Produce product (2) — dehydration	similar in outcome but with the addition of control hazards and respond to problems
PMAOPS329A	Produce product using liquid extraction	PMAHYD309A	Produce product (4) — liquid extraction	similar in outcome but with the addition of control hazards and respond to problems
PMAOPS330A	Communicate pipeline control centre operations	PMAHYD330A	Communicate pipeline control centre operations	similar in outcome but with the addition of control hazards and respond to problems
PMAOPS340A	Operate cryogenic processes			
PMAOPS350A	Match and adjust colour	ICPIM31CA	Manufacture inks/coatings	*Not* equivalent
PMAOPS390A	Operate a biochemical process			
PMAOPS400A	Optimise operating systems	PMAPROC400A	Optimise operating systems	same intent, but wording modified to better reflect this and the alignment
PMAOPS401B	Trial new process/product	PMAPROC401A	Trial new process/product	some wording changes but equivalent.
PMAOPS410A	Monitor remote production facilities	PMAHYD400A	Monitor treatment facilities, operations and stations	similar in outcome but with the addition of control hazards and respond to problems
PMAOPS411A	Manage plant shutdown and restart	PMAHYD401A	Manage plant shutdown and restart	no change
PMAOPS450A	Solve colour problems			

PMA02 V3 code	Unit title	PMA98 code	Unit title	Comment
PMAOPS511A	Determine energy transfer loads			
PMAOPS512A	Determine mass transfer loads			
PMAOPS520B	Manage utilities			
PMAOPS521B	Plan plant shutdown			
PMAOPS550A	Develop a colour formulation			
PMAOPS600B	Modify plant			
PMAPER200C	Work in accordance with an issued permit	PMAPER200A	Work in accordance with an issued permit	equivalent but not identical units
PMAPER201C	Monitor and control work permits	PMAHYD209A	Monitor the permit to work	equivalent but not identical units
PMAPER201C	Monitor and control work permits	PMAPER301A	Monitor and control work permits	similar, has been realigned
PMAPER205B	Enter confined space	PMAHYD205A	Enter confined space	not equivalent, but the replacement unit to align with standard
PMAPER300C	Issue work permits	PMAPER300A	Issue work permits	similar but now excludes hot work and confined space entry
PMAPER302B	Issue work permits (hot work/ confined space)			
PMASMELT260A	Form carbon anodes			
PMASMELT261A	Bake carbon anodes			
PMASMELT262A	Clean and strip anode rods			
PMASMELT263A	Spray carbon anodes			
PMASMELT264A	Start up reduction cells			
PMASMELT265A	Operate reduction cells			
PMASMELT266A	Deliver molten metal			
PMASMELT267A	Cast aluminium ingots			
PMASMELT268A	Vertical Direct Casting			
PMASUP100B	Apply workplace procedures	PMAQUAL100A	Contribute to Quality Processes	replacement unit but not equivalent

PMA02 V3 code	Unit title	PMA98 code	Unit title	Comment
PMASUP110A	Relay and respond to information	PMACOM100A	Relay and respond to information	no change
PMASUP120A	Follow environmental work practices	PMAENV100A	Identify and minimise environmental hazards	replacement unit but not equivalent
PMASUP130B	Follow established work plan	PMAPLAN100A	Follow established work plan	no change
PMASUP200B	Implement production efficiencies	PMAQUAL200A	Apply quality processes	replacement unit but not equivalent
PMASUP210A	Process and record information	PMACOM200A	Process and record information	no change
PMASUP220A	Monitor and control environmental hazards	PMAENV200A	Monitor and control environmental hazards	replacement unit but not equivalent
PMASUP236A	Operate vehicles in the field	PMAHYD236A	Operate vehicles in the field	replacement unit but not equivalent
PMASUP237A	Undertake crane, dogging and load transfer operations	PMAHYD237A	Undertake crane, dogging and load transfer operations	similar in outcome but with the addition of control hazards and respond to problems
PMASUP240A	Undertake minor maintenance	PMAMAIN201A	Undertake minor maintenance	no change
PMASUP241A	Maintain pipeline easements	PMAHYD232A	Maintain pipeline easements	similar in outcome but with the addition of control hazards and respond to problems
PMASUP242A	Monitor pipeline civil works	PMAHYD233A	Monitor pipeline civil works	similar in outcome but with the addition of control hazards
PMASUP243A	Monitor and maintain pipeline coatings	PMAHYD235A	Coat pipelines	equivalent but not identical units
PMASUP300B	Identify and implement opportunities to maximise production efficiencies	PMAQUAL300A	Initiate continuous improvement	replacement unit but not equivalent
PMASUP320A	Implement and monitor environmental policies			
PMASUP330B	Schedule production	PMAPLAN300A	Schedule production	no change

PMA02 V3 code	Unit title	PMA98 code	Unit title	Comment
PMASUP340A	Conduct pipeline pigging	PMAHYD331A	Conduct pipeline pigging	similar in outcome but with the addition of control hazards and respond to problems
PMASUP341A	Monitor and maintain instrument and control systems	PMAHYD332A	Monitor and maintain instrument and control systems	no change
PMASUP342A	Monitor and maintain electrical systems	PMAHYD333A	Monitor and maintain electrical systems	no change
PMASUP343A	Monitor and maintain cathodic protection systems	PMAHYD334A	Monitor and mntn pipeline cathodic protection systems	similar in outcome but with the addition of control hazards and respond to problems
PMASUP344A	Monitor and control repairs and modifications on operational pipe	PMAHYD335A PMAHYD336A	Weld and cut operational pipeline Undertake pipeline repairs and modifications	changed to better reflect the supervisory nature of the role merged with HYD336 changed to better reflect the supervisory nature of the role merged with HYD335
PMASUP390A	Use structured problem solving tools			
PMASUP410A	Develop plant documentation	PMACOM300A	Contribute to the development of plant documentation	equivalent but realigned
PMASUP420A	Minimise environmental impact of process	PMAENV300A	Minimise environmental impact of process	equivalent but realigned
PMASUP432A	Coordinate pipeline projects	PMAHYD432A	Coordinate pipeline projects	no change
PMASUP440A	Commission/recommission plant	PMAHYD433A PMAMAIN400A	Commission/decommission pipelines Commission/recommission plant	equivalent but not identical units equivalent but not identical units
PMASUP441B	Decommission plant	PMAMAIN401A	Decommission plant	equivalent but not identical units

PMA02 V3 code	Unit title	PMA98 code	Unit title	Comment
PMASUP520A	Review procedures to minimise environmental impact of process			
PMASUP540A	Analyse equipment performance			
PMASUP620A	Manage environmental management system			
PMBCOMP201B	Use computers in the workplace			
PMBMAINT303B	Identify equipment faults			
PMCSUP292A	Sample and test materials and product	PMATEST200A PMATEST201A PMATEST202A	Collect and prepare standard samples Perform qualitative and quantitative tests Operate laboratory equipment and instruments	may be regarded as equivalent merged into SUP292, alternatively see PMLTEST300A *Perform basic tests* merged into SUP292, alternatively see PMLTEST300A *Perform basic tests*
PMLSAMP400A	Obtain representative samples in accordance with a sampling plan			
PMLTEST300A	Perform basic tests			
PSPGOV308A	Work effectively with diversity			
PSPMNGT604A	Manage change			
PSPMNGT605A	Manage diversity			
PUAFIR306A	Render hazardous materials safe			
PUASAR003A	Undertake technical rescue			
PUASAR004A	Undertake vertical rescue			

PMA02 V3 code	Unit title	PMA98 code	Unit title	Comment
TDTD1097B	Operate a forklift	TDTD10A	Operate a forklift	an updated unit which now aligns with the forklift 'ticket' requirements
UTPNEG162A	Operate and monitor boiler steam/water cycle	UTUNEG162A	Operate and monitor boiler steam/water cycle	updated, equivalent unit
UTPNEG210A	Manage, operate and monitor turbine	UTUNEG210A	Manage, operate and monitor turbine	updated, equivalent unit
9597 v 3	Undertake corrosion inspection in a petrochemical environment			This unit drawn from the New Zealand Qualifications Framework
9630 v 3	Demonstrate knowledge of HAZOP study and QRA in a petrochemical environment			This unit drawn from the New Zealand Qualifications Framework

Competency standards

What are competency standards?

The broad concept of competency is related to realistic work practices expressed as an outcome that can be understood by all people in the workplace as well as by trainers and assessors. It is important that the meaning of competency is interpreted and understood in the same way by different users, and in different situations.

Competency comprises specified knowledge and skills relevant to an industry, and the application of that knowledge and skills to the standard of performance required in the workplace.

ANTA's definition of competency encompasses several features: "The concept of competency focuses on what is expected of an employee in the workplace rather than the learning process, and embodies the ability to transfer and apply skills and knowledge to new situations and environments".

An element of the Training Package is the competency standard, which is made up of a number of units of competency. Each unit of competency has a title, unit descriptor, elements, performance criteria, a range statement and an evidence guide.

Unit title

The unit title is a succinct statement of the broad area of competency covered by the unit and is expressed in terms of the outcome.

Unit descriptor

The unit descriptor expands, as necessary, on the title of the unit to accurately and clearly reflect the complete purpose and intent of the unit.

Elements of competency

Elements of competency are the basic building blocks of the unit. They describe, in terms of outcome, the significant functions and tasks that a person in a particular area of work is able to perform.

Performance criteria

The performance criteria specify all the relevant tasks, roles, skills, and applied knowledge and understanding that demonstrate competent performance.

Range statement

The range statement links the required knowledge and organisational and technical requirements to a context. It describes any contextual variables that will be used or encountered when applying the competency in work situations.

Evidence guide

The evidence guide specifies the evidence required to demonstrate competency of the unit of competency. The actual assessment should be conducted in the workplace and/or training environment. The evidence guide provides reliable and succinct information about how the quality and level of performance could be determined. The evidence must relate directly to the elements, performance criteria and range statement.

The evidence guide includes the following advice:

- Clear statements about the assessment process that direct the focus of the individual, the trainer and the assessor to the holistic nature of competency and the link to the performance criteria and underpinning knowledge. The evidence guide specifically indicates evidence demonstrating that the competent person can deal with unexpected contingencies beyond the usual routine.

- The evidence guide details the specific products, materials or outcomes that must be available to demonstrate competency. Other units of competency that can or should be jointly assessed are indicated. It also deals with any specific issues about the context of assessment; whether it must be assessed under particular workplace conditions and what conditions a valid simulated environment should meet. It may also include a specific statement of the resource implications, for example, access to particular equipment, infrastructure or situations.

The evidence guide may cover consistency in performance to indicate any requirement to demonstrate competency over time in a number of contexts and involving a range of evidence.

Key Competency Explanation

Integration of the Key Competencies within Training Packages

The Key Competencies are general capabilities prepared by the Mayer Committee in *Putting Education to Work: The Key Competencies Report* (Mayer 1992). They were described in the Mayer report as being fundamental to the transfer and application of learning and were defined as a set of capabilities that enable people to transfer to the workplace knowledge and skills developed in classrooms and other learning situations.

ANTA has recognised the critical role of the Key Competencies in ensuring that the Australian work force is equipped with the skills necessary to effectively participate in current and emerging forms of work organisation. ANTA specifies that all Training Packages "require the effective integration of key competencies".

The seven Key Competencies identified in the Mayer (1992) report are described below.

1. Collecting, analysing and organising information

The capacity to locate, sift and sort information in order to select what is required and to present it in a useful way, and evaluate both the information itself and the sources and methods used to collect it.

2. Communicating ideas and information

The capacity to communicate effectively with others using the range of spoken, written, graphic and other non-verbal means of expression.

3. Planning and organising activities

The capacity to plan and organise one's own work activities, including making good use of time and resources, sorting out priorities and monitoring one's performance.

4. Working with others and in teams

The capacity to interact effectively with other people both on a one-to-one basis and in groups, including understanding and responding to the needs of a client and working effectively as a member of a team to achieve a shared goal.

5. Solving problems

The capacity to apply problem-solving strategies in purposeful ways, both in situations where the problem and the solution are clearly evident and in situations requiring creative thinking and a creative approach to achieve a desired outcome.

6. Using mathematical ideas and techniques

The capacity to use mathematical ideas, such as number and space, and techniques such as estimation and approximation, for practical purposes.

7. Using technology

The capacity to apply technology, combining the physical and sensory skills needed to operate equipment with the understanding of scientific and technological principles needed to explore and adapt systems.

Key Competencies are essential for effective participation in the emerging patterns of work and work organisation. They focus on the capacity to apply knowledge and skills in an integrated way in work situations. Key Competencies are generic, in that they apply to work generally rather than to work in particular occupations or industries. (Mayer 1992, p. 5)

Levels of performance

The Mayer committee (1992, p. 13) established three levels of performance in each of the seven Key Competencies. These are stand-alone levels and do not correspond to levels in the Australian Qualifications Framework (AQF).

- **Performance Level 1** describes the competence needed to undertake activities efficiently and with sufficient self-management to meet the explicit requirements of the activity, and to make judgements about the quality of outcome against established criteria.

- **Performance Level 2** describes the competence needed to manage activities requiring the selection, application and integration of a number of elements, and to select from established criteria to judge quality of process and outcome.

- **Performance Level 3** describes the competence needed to evaluate and reshape processes, to establish and use principles in order to determine appropriate ways of approaching activities, and to establish criteria for judging quality of process and outcome.

In simple terms:

- **Level 1** is concerned with the level of competence needed to undertake tasks effectively;

- **Level 2** with the ability to manage tasks; and

- **Level 3** with concepts of evaluating and reshaping tasks.

Although the levels are designed and used within Competency Standards to indicate levels of complexity, the current definitions are problematic. The industry or workplace context is generally seen as far more indicative in determining the degree of difficulty of the application of the Key Competencies than the prescribed and abstracted performance levels above.

Where the Key Competencies are explicitly embedded within the Units of Competence, the level of performance for the group of Key Competencies involved will align to the AQF level for that unit. This will be more readily understood by those delivering training and/or assessment of the unit rather than the performance levels outlined in the units themselves.

Implications of Key Competencies for Vocational Education and Training

The skills identified by the Mayer committee describe capabilities commonly used as key selection criteria by employers. They underpin the ability of employees to adapt to technological, organisational, societal and functional change.

The Key Competencies need to be explicitly developed and applied in vocational education and training, both in delivery and assessment, in order to ensure that staff members have the flexibility and adaptability to respond effectively to current and future directions and challenges within Australian workplaces. This means that the Key Competencies cannot be considered as supplementary to vocational competence, they are integral to it. They are part of good learning and are essential to good practice. It is, therefore, critical that Training Package developers, training program developers, teachers and trainers deliberately incorporate the Key Competencies into the design, customisation, delivery and assessment of vocational education and training programs.

A deliberate effort is required to incorporate the Key Competencies explicitly into every stage of the training cycle, represented in figure 1, through Competency Standard and Training Package development, and through delivery, learning, assessment and reflection.

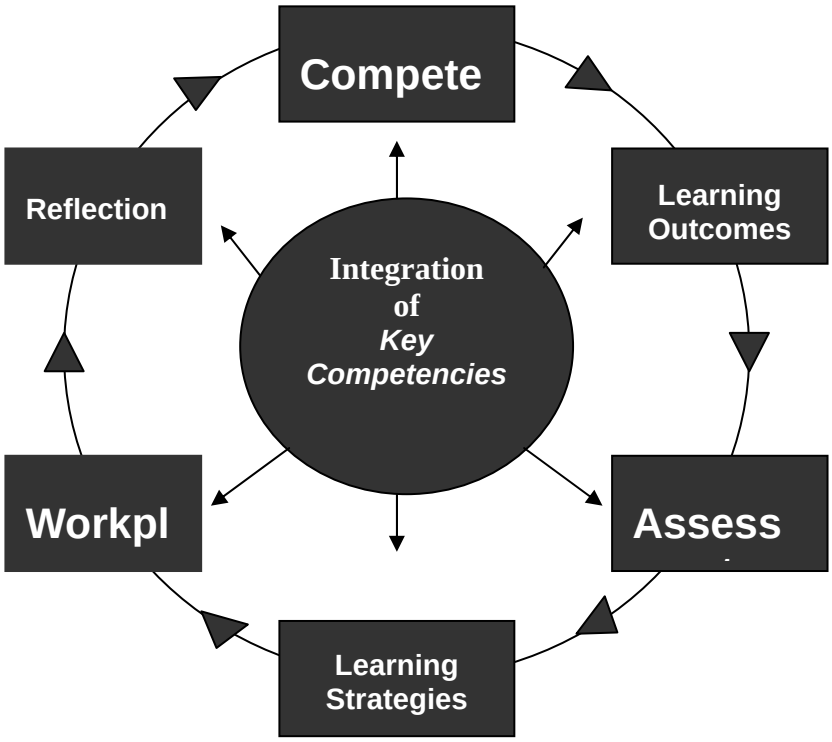


Figure 6: Training Cycle

Glossary

In this Training Package the following terms are used with the meanings given below. These meanings may be slightly more restrictive than common usage but have been adopted to allow greater clarity and definition within this Training Package. When used in a unit of competency, these words are underlined.

BOD Biochemical oxygen demand — the amount of oxygen consumed by micro-organisms as they biodegrade. This is measured using a standard test over 5 days and so is called BOD_5.

business sustainability Means a business is profitable and competitive in the forseeable future. Effective management of environmental impacts and opportunities can contribute to business sustainability by reducing costs, differentiating goods and services and contributing to a better corporate image.

confined space The Australian standard definition given for confined space entry is used in this Training Package, *viz:*
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.

Any other 'tight spot' has been referred to as a 'restricted space'. Examples include:

- 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).

customer Any person who is the recipient of the product or service which flows from the unit of competency. They may be internal or external to the organisation.

environmental performance	This may be defined as a measure of an organisation's impact on the environment and of its ability to manage that impact.
FPSO	Floating production, storage and off-loading (facility)
FSO	Floating storage and off-loading (facility)
hazard	Something with the potential to cause harm. There are two types of hazards: 1. any operation that could possibly cause a catastrophic release of toxic, flammable or explosive chemicals 2. any action or environmental factor that could result in injury to personnel. A routine hazard is any potential hazard that needs to be identified on a regular basis. A potential hazard may or may not be associated with a high risk.
HAZCHEM	A system of labelling which codifies the hazard and the hazard control procedures for classes of chemicals. This provides simpler advice than the interpretation of toxicological data such as might be in an MSDS. However, to be effective, the hazchem system and codes need to be known.
hierarchy of control	The preferred order of risk control measures from most to least preferred, that is: 1. elimination 2. substitution 3. engineering controls 4. administrative controls 5. personal protective equipment.
integral	Equipment which forms part of the operation of a main item of equipment is regarded as 'integral' to that main item. Examples include valves and lubricators. Typically equipment is regarded as 'integral' to the main item if: • it is close/attached to the main item • it has simultaneous operation with the main item • its operation does not require significant additional knowledge or skills. Equipment is not integral if it has independent operation of its own.

L_e/d	The describing of the relative head loss of a pipe fitting etc in terms of the equivalent length of straight pipe so that overall head loss can be estimated/compared
locked out	Equipment which is not to be operated for any reason may be padlocked, or otherwise prevented from operation using a keyed lock. The term 'locked out' is commonly used. A lock out may be accompanied by a tag out, or a lock out system may incorporate a tag.
MSDS	Material safety data sheets — all manufacturers and suppliers of chemicals are obliged to produce MSDS for each chemical. MSDS contain statements about potential hazards and the correct methods of handling to minimise the hazard.
muda	(Waste) — activities and results to be eliminated; within manufacturing, categories of waste, according to Shigeo Shingo, include: • excess production and early production • delays • movement and transport • poor process design • inventory • inefficient performance of a process • making defective items.
operability	Can be defined as any operation inside the design envelope that would cause a shutdown which could possibly lead to a violation of environmental, health or safety regulations or negatively impact on profitability.
P&ID	Piping and instrumentation drawing — a common and basic engineering drawing in this industry showing all major items of equipment and their piping linkages and the instrumentation which controls them.
packaged	The term 'packaged' plant means an item of plant which may or may not be skid mounted and is brought in ready to operate. This is how the industry typically uses this term. It is also used in this Training Package to include all items of plant which are operated with minimal need to understand the operation of the unit, regardless of the size and complexity of the item itself. It also covers plant where the operation is basically restricted to turning it on and off with minimal monitoring, control and understanding of its operation by the user. Typical packaged plant may include compressors (large and small), boilers, cooling towers (where the servicing and control is outsourced), air conditioning units, etc.

pig (pigging) A device sent through a pipeline to separate products or for pipe cleaning and maintenance.

The act of sending a pig through a pipe is pigging.

place of work Defined under the Occupational Health and Safety Regulations 2001, it is 'premises where persons work'.

PPE Personal protective equipment — the last line of defence against workplace hazards — includes items such as safety boots, gloves, goggles, ear muffs.

premises Defined under the Occupational Health and Safety Regulations 2001, it includes 'any place', and in particular includes:

(a) any land, building or part of any building, or

(b) any vehicle, vessel or aircraft, or

(c) any installation on land, on the bed of any waters or floating on any waters, or

(d) any tent or movable structure.

prerequisites A prerequisite unit of competency has knowledge/skills which are required to achieve a subsequent competency. In a structured training program, units with prerequisites would normally be taught after the prerequisite unit. In an assessment situation, they would often be assessed concurrently.

procedures Includes all work instructions, standard operating procedures, formulas/recipes, batch sheets, temporary instructions and similar instructions provided for the smooth running of the plant. They may be written, verbal, computer based or in some other form.

For the purposes of this Training Package, 'procedures' also includes good operating practice as may be defined by industry codes of practice (eg Responsible Care) and government regulations.

reports Includes the filling out of forms, completing logs/log sheets, entering data into a computer based record system, noting required items on a whiteboard or communicating verbally.

risk A 'risk' can be defined as the likelihood that harm will occur and the severity of the consequences of that harm. The more significant the risk, the more complex the risk assessment process may need to be.

risk assessment	There are two types of risk assessments: 1. an assessment done in an office by looking at potential hazards and operability problems as a 'one off' for a new/modified design or a periodic review of an existing plant eg using the HAZOP methodology 2. possibly known as 'routine hazard identification and risk assessment' — it is live, real time and ongoing in a facility, and is conducted on a daily/hourly basis for situations that would/could have previously been identified in a 'one off' assessment. Examples of assessment tools include DuPont STOP, Hazpak.
risk register	A register of all identified risks and documentation of the strategies/plans in place to deal with any event/incident that might occur.
semi-bulk	A generic industry term used to describe large containers such as bulker boxes and pallecons, which may be known by their brand name within a company. These containers, which may store around a tonne of material are larger than normal containers but are not bulk. They are a common delivery more and may also be used for intermediate storage.
senses	The use of the senses of sight, hearing, smell and where appropriate touch. Taste would rarely, if ever, be an appropriate sense in this context.
tagged out	Equipment not to be operated for any reason will carry a 'tag' indicating this and so the term 'tagged out' is commonly used. A tag out may be accompanied by a lock out, or a lock out may be used to replace a tag out.
triple bottom line principles	Can be defined as the integration of environmental, commercial and social aspects of business operations.
utilities	Utilities is used to mean: • steam (saturated and/or superheated) • air (instrument, safety, process and/or mechanical) • water (cooling and/or process) • fuel (gas, oil) • other heating/cooling mediums (oil, 'Dowtherm', brine) • electricity.
workplace	See 'place of work'.

Qualifications Framework

for the

PMA02 Chemical, Hydrocarbons and Oil Refining Training Package

Contents

Qualifications Framework

Introduction

What is the AQF?

The Australian Qualifications Framework (AQF) provides a national framework for all education and training qualifications in Australia. There are twelve qualifications in the AQF. Six of these are relevant to the vocational education and training (VET) sector and these six are relevant to this current Training Package. The twelve qualifications are:

Schools sector	VET sector	Higher Education sector
		Doctoral Degree
		Masters Degree
		Graduate Diploma
		Graduate Certificate
		Bachelor Degree
	Advanced Diploma	Advanced Diploma
	Diploma	Diploma
	Certificate IV	
	Certificate III	
	Certificate II	
	Certificate I	
Senior Secondary Certificate of Education		

The use of the AQF for all vocational education and training ensures national consistency for all trainees, students, employers and providers in the VET sector. This consistency enables national recognition of competency based on endorsed competency standards. Competency is assessed in accordance with the endorsed assessment guidelines.

Statement of attainment

Where competence has been achieved in accordance with the endorsed standards but does not meet the requirements of a full qualification, Statements of attainment can be issued for the competencies which have been successfully achieved. Additional competencies may be achieved later which will build towards the awarding of a qualification. Registered Training Organisations must recognise competencies already achieved and recorded on a statement of attainment issued by another Registered Training Organisation.

Qualifications for this sector

In this Training Package, the following qualifications are available

Certificate I in Process Plant Skills	PMA10102
Certificate I in Process Support	PMA10202
Certificate II in Process Plant Operations	PMA20102
Certificate II in Process Support	PMA20202
Certificate III in Process Plant Operations	PMA30102
Certificate III in Process Support	PMA30202
Certificate IV in Process Plant Technology	PMA40102
Diploma of Process Plant Technology	PMA50102
Advanced Diploma of Process Plant Technology	PMA60102

In addition, this Training Package makes available a:

Statement of Attainment in Contractor Safety.

The requirements for the awarding of these generic qualifications are listed in section 2, *Packaging advice*.

Clusters of competencies which might lead to streamed awards are shown in section 3. These clusters have been chosen as they contain that body of knowledge and skill which is special to that stream and discriminate between it and other streams. If a person wishes to specialise in one particular stream at Certificate II or III, then additional guidelines apply.

The core (which is common to all streams) and the support requirements must also be met. The streamed qualifications have the same code as the generic qualifications and are not separately endorsed qualifications. If you prefer you could consider the clusters as suggested packaging advice. For example, PMA20102 Certificate II in Process Plant Operations is the generic qualification and PMA20102 Certificate II in Process Plant Operations (Hydrocarbons Extraction) is the same qualification streamed.

The streams are:

- Chemical and Oil
- Hydrocarbons — Extraction
- Hydrocarbons — Transmission

The generic and streamed qualifications at Certificate II and III are intended for people who are actively involved in producing products. The Process Support Certificates II and III are for production support workers (people working in the industry and filling the vital production support roles, but who may not have the opportunity to develop competence in the units of competency related directly to producing products)

Differentiation of qualifications

The qualifications at AQF 1, 2, 3, 4, 5 and 6 are differentiated according to the breadth and depth of knowledge and skills required and the complexity of the contexts in which the knowledge and skills are applied. The *Australian Qualifications Framework Implementation Handbook*[3] details the differentiation of all AQF levels. This is summarised on the following page.

It is important to note that the AQF level differentiation is based on the knowledge and skill which the person is expected to use in the competency. It is not necessarily related to the level of sophistication or size of the equipment/process being operated. It should also be noted that the AQF level is not the sole determinant of the value added by that person.

3 Australian Qualifications Framework Advisory Board to MCEETYA, 1998, *Australian Qualifications Framework Implementation Handbook*, second edition

Distinguishing features of qualifications in the AQF

Certificate I	Certificate II	Certificate III	Certificate IV	Diploma	Advanced Diploma
Do the competencies enable an individual with this qualification to:	**Do the competencies enable an individual with this qualification to:**	**Do the competencies enable an individual with this qualification to:**	**Do the competencies enable an individual with this qualification to:**	**Do the competencies enable an individual with this qualification to:**	**Do the competencies enable an individual with this qualification to:**
demonstrate knowledge by recall in a narrow range of areas	demonstrate basic operational knowledge in a moderate range of areas	demonstrate some relevant theoretical knowledge	demonstrate understanding of broad knowledge base incorporating some theoretical concepts	demonstrate understanding of broad knowledge base incorporating theoretical concepts, with substantial depth in some areas	demonstrate understanding of specialised knowledge with depth in some areas
demonstrate basic practical skills such as the use of relevant tools	apply a defined range of skills	apply a range of well developed skills			
	apply known solutions to a limited range of predictable problems	apply known solutions to a variety of predictable problems	apply solutions to a defined range of unpredictable problems	analyse and plan approaches to technical problems or management requirements	analyse, diagnose, design and execute judgements across a broad range of technical or management functions
perform a sequence of routine tasks given clear direction	perform a range of tasks where choice between a limited range of options is required	perform processes that require a range of well developed skills where some discretion and judgement is required	identify and apply skill and knowledge areas to a wide variety of contexts with depth in some areas	transfer and apply theoretical concepts and/or technical or creative skills to a range of situations	demonstrate a command of wide ranging, highly specialised technical, creative or conceptual skills
receive and pass on messages/ information	assess and record information from varied sources	interpret available information, using discretion and judgement	identify, analyse and evaluate information from a variety of sources	evaluate information using it to forecast for planning or research purposes	generate ideas through the analysis of information and concepts at an abstract level
	take limited responsibility for own outputs in work and learning	take responsibility for own outputs in work and learning	take responsibility for own outputs in relation to specified quality standards	take responsibility for own outputs in relation to broad quantity and quality parameters	demonstrate accountability for personal outputs within broad parameters
		take limited responsibility for the output of others	take limited responsibility for the quantity and quality of the output of others	take limited responsibility for the achievement of group outcomes	demonstrate accountability for group outcomes within broad parameters

Endorsed competency standards and the AQF

Nationally endorsed competency standards define the knowledge and skills required in particular industries and occupations.

The competencies in this Training Package are categorised into:

- core
- operations
- support.

Core competencies are those which are essential to all sectors of the industry.

Operations competencies are those which relate specifically to the equipment and processes employed by this industry to produce products. It is these competencies which contain the knowledge and skills required to operate the plant at the specified level.

Support competencies are those other competencies required by the industry in order to complete real jobs, but which are not specific to the equipment and processes of this industry and do not contain significant industry specific knowledge or skills.

The qualifications available through this Training Package

- are based on the endorsed competency standards for this industry sector
- use a range of competencies from other endorsed competency standards.

Indicative competencies are listed from these other endorsed standards in section 5. Suitable, relevant endorsed competencies may be substituted for those indicated in this Qualifications Framework.

The qualification will still be awarded provided the guidelines given under *Packaging advice* (section 2) are met.

Packaging advice

General advice

Qualifications may be awarded by a Registered Training Organisation (RTO) when competencies which meet the specified packaging requirements have been achieved. Competencies achieved which do not combine to make a certificate may be recognised by a statement of attainment issued by an RTO.

Competencies have been categorised into core, operations and support units. To be awarded a certificate, competence must be demonstrated in:

- all core units for that certificate, plus
- a minimum, specified, number of operations units, plus
- other units chosen from this Training Package or other endorsed Training Package(s).

The packaging has been designed to cater for enterprises and learners in different industry contexts. Different operation units must be chosen for the awarding of different qualifications. Learners are NOT entitled to gain multiple qualifications at the same AQF level from a single selection of units of competency.

The rules aim to be as flexible as possible. While it is expected that many people at higher levels will be leading hands/supervisors/team leaders, these rules also allow for a technical expert to receive a Certificate IV by choosing further 'operations' units. The additional operations units will be a useful foundation for progression to the technical Diploma and Advanced Diploma.

Entry to any qualification may be at any level. People entering at Certificate III or IV (and above) need to meet the relevant prerequisite competencies. A person can enter a program of training at any level.

New Apprenticeships

All Certificates I through IV within this Training Package are potential New Apprenticeships.

VET in schools

The delivery and assessment of competencies and/or qualifications under this Training Package are encouraged as a VET in Schools program. However due to the requirements to demonstrate competency, it would be difficult for a school to assess and award qualifications within PMA02 except in close partnership with an appropriate organisation from the industry.

The AQTF rules are the overriding requirements in this regard. For these reasons it is unlikely that a VET in School program could offer whole qualifications under this Training Package above AQF 2.

Qualification pathways

It is assumed that most people new to the industry will enter at the Certificate I or Certificate II levels. Most people already in the industry should be already partly or wholly qualified at the Certificate II level and will presumably enter at their existing level and simply complete any outstanding competency requirements. For experienced workers in the industry, it may well be appropriate for them to enter at the Certificate III (or even Certificate IV or higher) level. Entry and exit at any point is possible.

People with other relevant qualifications (eg, maintenance trades) may choose to enter at higher levels (eg, Certificate IV or Diploma) but must observe competency prerequisites.

As learners progress through the available qualifications, the level of required knowledge and understanding increases both in breadth and depth. These higher level qualifications are for people specialising as technicians/technologists in the chemical, hydrocarbons and oil refining industry.

Operators who move into non-technician roles may well be better served by seeking further qualification in other areas such as frontline management or laboratory operations.

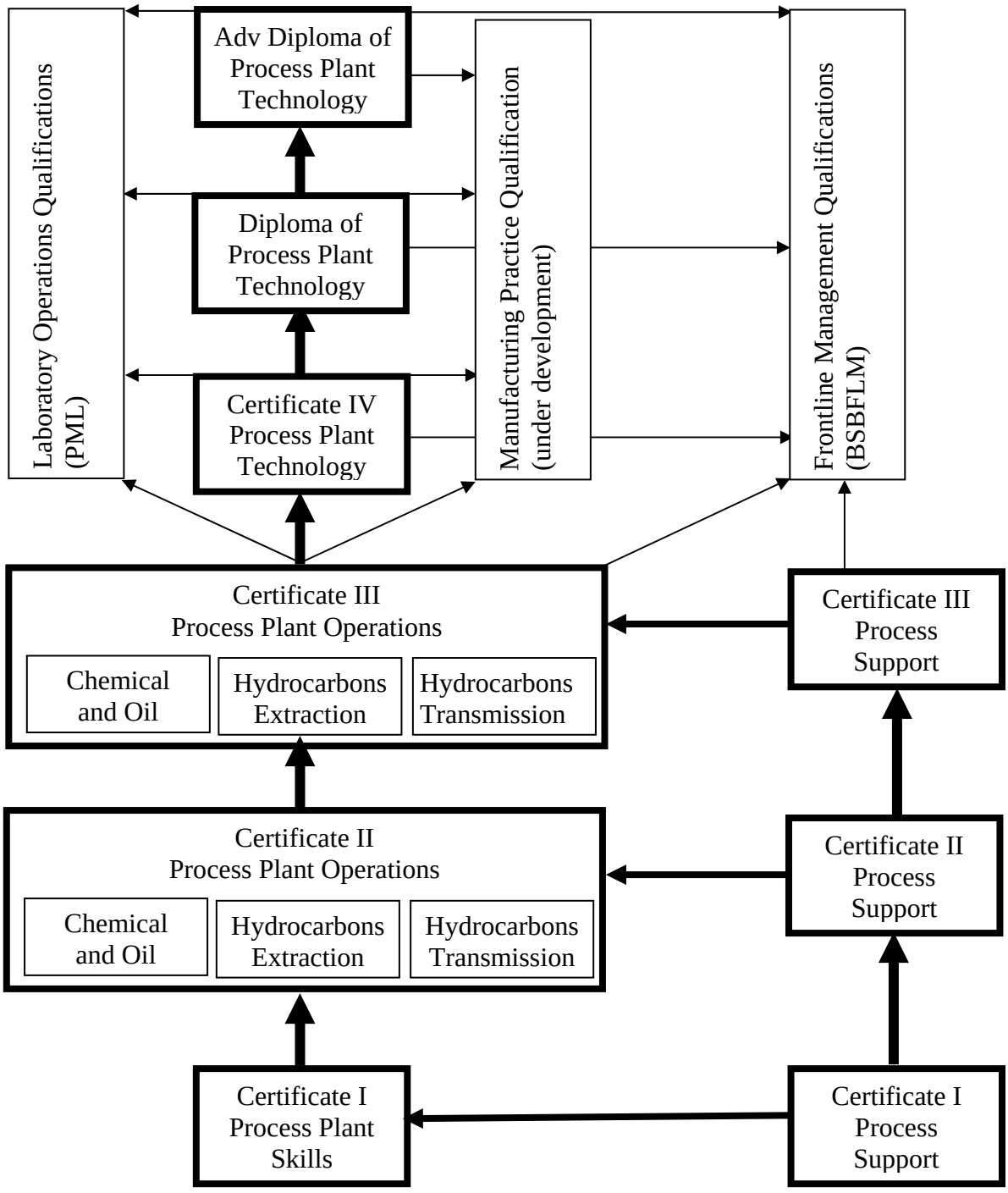
Prerequisites

Some units of competency have stated prerequisites. In any approved training scheme, it is expected that competency will be attained in the prerequisite units before it is attained in the unit having the prerequisite(s). In this situation a unit with two prerequisites will be counted as three units towards the qualification once competency has been attained in all units.

In an assessment of existing competency, it is possible to assess the unit and its prerequisites together as an integrated assessment. In this situation a unit with two prerequisites will be counted as three units towards the qualification once competency has been attained in all units.

Qualifications structure

The diagram below represents a model of the available qualifications and pathways. Details are in the *Qualifications Framework.*



Qualifications summary

The table below summarises the relevant number of units in each category for each qualification. See specific requirements for each qualification for details.

Qualification	Number of units					
	Total[4]	Core[5]	Ops[6]	At level[7]	Level-1[8]	Import[9]
Certificate I in Process Plant Skills PMA10102	8	4	2	8		1
Certificate I in Process Support PMA10202	8	4	0	8		1
Certificate II in Plant Operations PMA20102	16	5	4	6		2
Certificate II Process Support PMA20202	16	5	0	6		2
Certificate III in Process Plant Operations PMA30102	21	5	2	4		3
Certificate III in Process Support PMA30202	21	5	0	4		3
Certificate IV in Process Plant Technology PMA40102	26	5	1	3	2	5
Diploma of Process Plant Technology PMA50102	32	5	2	4	2	6
Advanced Diploma of Process Plant Technology PMA60102	37	5	1	2	2	7

[4] Minimum total number of units of all categories required (note that these numbers are cumulative – if for example you have completed a Certificate II qualification under this Training Package you will only be required to achieve a further 5 units to gain a Certificate III qualification)
[5] Minimum number of core units required
[6] Minimum number of OPS (operations) units required
[7] Minimum number of units which must be chosen from the suite of units at the same AQF level as the qualification
[8] Minimum number of units which must be chosen from the suite of units at the same AQF level as the qualification or the level immediately below
[9] **Maximum** number of units which may be imported from another Training Package

Table of prerequisites

Unit	Prerequisite unit(s)
PMAOHS210B Undertake first response to non-fire incidents	PMAOHS110B Respond to emergency situation
PMAOHS300B Implement and monitor OHS policies and procedures for a work group	PMAOHS200B Participate in workplace safety procedures
PMAOHS320B Provide advanced first aid response	PMAOHS220 Provide initial first aid response
PMAOHS321 Provide first aid response in remote and/or isolated area	PMAOHS220 Provide initial first aid response
PMAOHS400B Contribute to workplace OHS management system	PMAOHS300B Implement and monitor OHS policies and procedures for a work group
PMAOHS410B Manage emergency incidents	PMAOHS212B Undertake first response to fire incidents
PMAOHS503A Maintain the workplace OHS management system	Nil, replaces: PMAOHS500A Manage workplace OHS management system AND PMAOHS501A Evaluate and improve workplace OHS management system
PMAOHS510B Manage risk	PMAOHS401B Assess risk
PMAOHS601A Establish a workplace OHS management system	PMAOHS503A Maintain workplace OHS management system
PMAOPS231A Control gas odourisation	PMASUP220A Monitor and control environmental hazards
PMAOMIR301A Undertake initial rescue	PMAOHS216B Operate breathing apparatus PMAOHS220A Provide initial first aid response PMAOMIR217A Gas test atmospheres PMAPER200C Work in accordance with an issued permit PMAPER205B Enter a confined space
PMAOPS300A Operate a production unit	at least two relevant OPS200 units
PMAOPS301A Produce products by distillation	PMAOPS201A Operate fluid flow equipment PMAOPS205A Operate heat exchangers
PMAOPS302A Operate reactors and reaction equipment	PMAOPS201A Operate fluid flow equipment PMAOPS202A Operate fluid mixing equipment PMAOPS205A Operate heat exchangers
PMAOPS303A Operate furnaces	PMAOPS201A Operate fluid flow equipment OR PMAOPS204A Use utilities and services
PMAOPS304A Operate and monitor compressor systems and equipment	PMAOPS221A Operate and monitor prime movers
PMAOPS305A Operate process control systems	at least two relevant OPS200 units or one relevant OPS 300 unit

Unit	Prerequisite unit(s)
PMAOPS307A Transfer bulk fluids into/out of storage facility	PMAOPS201A Operate fluid flow equipment OR PMAOPS222A Operate and monitor pumping systems and equipment OR PMAOPS223A Operate and monitor valve systems
PMAOPS309A Operate particulates handling/storage equipment	PMAOPS210A Operate particulates handling equipment
PMAOPS312A Undertake ship loading/unloading operations	PMAOPS222A Operate and monitor pumping systems and equipment OR PMAOPS223A Operate and monitor valve systems
PMAOPS321A Undertake well management	PMAOPS201A Operate fluid flow equipment OR PMAOPS222A Operate and monitor pumping systems and equipment OR PMAOPS223A Operate and monitor valve systems
PMAOPS325A Generate electrical power	PMAOPS221A Operate and monitor prime movers.
PMAOPS340A Operate cryogenic processes	PMAOPS205A Operate heat exchangers PMAOPS221A Operate and monitor prime movers
PMAOPS400A Optimise operating systems	PMASUP300B Identify and implement opportunities to maximise production efficiencies PMASUP390A Use structured problem solving tools AND at least one relevant OPS300 unit
PMAOPS401B Trial new process/product	at least one relevant OPS300 unit
PMAOPS410A Monitor remote production facilities.	PMAOPS305A Operate process control systems Other OPS units relevant to the remote facilities monitored
PMAOPS411A Manage plant shutdown and restart	at least one relevant OPS300 unit
PMAOPS521B Plan plant shutdown	at least one relevant OPS300 unit
PMAOPS550A Develop a colour formulation	PMAOPS350A Match and adjust colour PMAOPS450A Solve colour problems
PMAOPS600B Modify plant	PMAOPS400A Optimise operating systems OR PMAOPS401B Trial new process/product AND PMASUP540A Analyse equipment performance OR PMAOPS511A Determine energy transfer loads OR PMAOPS512A Determine mass transfer loads
PMAPER205B Enter confined space	PMAPER200C Work in accordance with an issued permit

Unit	Prerequisite unit(s)
PMASUP200B Implement production efficiencies	PMASUP100B Apply workplace procedures PMASUP110A Relay and respond to information PMAOPS101B Read dials and indicators
PMASUP210A Process and record information	PMASUP110A Relay and respond to information
PMASUP220A Monitor and control environmental hazards	PMASUP120A Follow environmental work practices
PMASUP236A Operate vehicles in the field	check local regulations
PMASUP237A Undertake crane, dogging and load transfer operations	check local regulations
PMASUP242A Monitor pipeline civil works	PMASUP241A Maintain pipeline easements
PMASUP300B Identify and implement opportunities to maximise production efficiencies	PMASUP200B Implement production efficiencies
PMASUP320A Implement and monitor environmental policies	PMASUP220A Monitor and control environmental hazards
PMASUP330B Schedule production	PMASUP130B Follow established work plan PMASUP210A Process and record information
PMASUP341A Monitor and maintain instrument and control systems	PMAPER300C Issue work permits
PMASUP342A Monitor and maintain electrical systems	PMAPER300C Issue work permits
PMASUP343A Monitor and maintain cathodic protection systems	check local regulations
PMASUP410A Develop plant documentation	PMASUP210A Process and record information
PMASUP420A Minimise environmental impact of process	PMASUP120A Follow environmental work practices
PMASUP440A Commission/ recommission plant	at least one relevant OPS300 unit
PMASUP441B Decommission plant	at least one relevant OPS300 unit
PMASUP520A Review procedures to minimise environmental impact of process	PMASUP320A Implement and monitor environmental policies
PMASUP620 Manage environmental management system	PMASUP520A Review procedures to minimise environmental impact of process

Certificate I in Process Plant Skills PMA10102

There is no streamed qualification in Certificate I.

To be awarded a Certificate I in Process Plant Skills, competency must be achieved in a total of 8 units of competency comprised of:

- all 4 core units
- at least 2 operations units
- 2 other units which may include 1 relevant unit from another endorsed Training Package to make up the required total number of units.

Core competencies

Unit code	Unit title
PMAOHS100C	Follow OHS procedures
PMASUP100B	Apply workplace procedures
PMASUP110A	Relay and respond to information
PMASUP120A	Follow environmental work practices

Operations competencies

Unit code	Unit title
PMAOPS100A	Use equipment to procedures
PMAOPS101B	Read dials and indicators
PMAOPS102A	Undertake housekeeping operations
PMAOPS105B	Select and prepare materials
FDFCORGMP1A	Apply basic good manufacturing practice

Support competencies

Unit code	Unit title
PMAOHS100C	Follow OHS procedures
PMAOHS110B	Respond to emergency situation
PMASUP130B	Follow established work plan
BSATEM101A	Participate in team to achieve designated goals

Certificate I in Process Support PMA10202

To be awarded a Certificate I in Process Support competency must be achieved in a total of 8 units of competency comprised of:

- all 4 core units AND
- sufficient other units to make up the required total. A maximum of 1 of these may be from another endorsed Training Package.

The operation units chosen for this certificate cannot be counted towards the achievement of a second qualification at this certificate level under this Training Package. A different set of operation units must be chosen for this purpose.

Core competencies

Unit code	Unit title
PMAOHS100C	Follow OHS procedures
PMASUP100B	Apply workplace procedures
PMASUP110A	Relay and respond to information
PMASUP120A	Follow environmental work practices

Operation and support competencies

Unit code	Unit title
PMAOPS100A	Use equipment to procedures
PMAOPS101B	Read dials and indicators
PMAOPS102A	Undertake housekeeping operations
PMAOPS105B	Select and prepare materials
FDFCORGMP1A	Apply basic good manufacturing practice
PMAOHS100C	Follow OHS procedures
PMAOHS110B	Respond to emergency situation
PMASUP130B	Follow established work plan
BSATEM101A	Participate in team to achieve designated goals

Certificate II in Process Plant Operations PMA20102

To be awarded a Certificate II in Process Plant Operations, competency must be achieved in a total of 16 units of competency comprised of:

- all 5 core units
- at least 4 operations units from the OPS2XX series
- sufficient other units to make up the required total. These must include at least 2 units from the 2XX series of PMA02, and may include a maximum of 2 relevant units from other endorsed Training Packages.

The operation units chosen for this certificate cannot be counted towards the achievement of a second qualification at this certificate level under this Training Package. A different set of operation units must be chosen for this purpose.

Holders of a Certificate I in Process Plant Skills will need an additional 8 units of competency to those already recognised by the Certificate I. These additional 8 units of competency must be chosen so that the total units, including those carried forward from a lower level qualification, comply with the above rules.

NOTES

1. Units shown in *italics* in the tables below are also part of Certificate I.
2. Units marked * have prerequisites. See individual unit for details.
3. Requirements for a streamed Certificate II are listed in section 3.
4. The customisation rules of section 4 may also need to be consulted
5. Units marked x may require a licence or 'ticket'. Check local regulations.

Core competencies

Unit code	Unit title
PMASUP110A	*Relay and respond to information*
PMASUP120A	*Follow environmental work practices*
PMASUP100B	*Apply workplace procedures*
PMAOHS110B	Respond to emergency situation
PMAOHS200B	Participate in workplace safety procedures

Operations competencies

Unit code	Unit title
PMAOPS200A	Operate and monitor an item of equipment
PMAOPS201A	Operate fluid flow equipment
PMAOPS202A	Operate fluid mixing equipment
PMAOPS203A	Handle goods

Unit code	Unit title
PMAOPS204A	Use utilities and services
PMAOPS205A	Operate heat exchangers
PMAOPS206A	Operate separation equipment
PMAOPS207A	Operate powered separation equipment
PMAOPS208A	Operate chemical separation equipment
PMAOPS210A	Operate particulates handling equipment
PMAOPS211A	Operate manufacturing extruders
PMAOPS212A	Use enterprise data system
PMAOPS213A	Package product/material
PMAOPS216A	Operate local control system
PMAOPS217A	Operate wet milling equipment
PMAOPS220A	Monitor chemical reactions in the process
PMAOPS221A	Operate and monitor prime movers
PMAOPS222A	Operate and monitor pumping systems and equipment
PMAOPS223A	Operate and monitor valve systems
PMAOPS224A	Provide fluids for utilities and support
PMAOPS230A	Monitor, operate and maintain pipeline stations and equipment
PMAOPS231A	Control gas odourisation
PMAOPS232A	Produce product by filtration
PMAOPS240A	Store liquids in bulk
PMAOPS290A	Operate a biotreater
PMASMELT260A	Form carbon anodes
PMASMELT261A	Bake carbon anodes
PMASMELT262A	Clean and strip anode rods
PMASMELT263A	Spray carbon anodes
PMASMELT264A	Start up reduction cells
PMASMELT265A	Operate reduction cells
PMASMELT266A	Deliver molten metal
PMASMELT267A	Cast aluminium ingots
PMASMELT268A	Vertical Direct Casting
FDFCORGMP2A	Implement good manufacturing practice

Support competencies

Unit code	Unit title	
PMASUP130B	*Follow established work plan*	
BSATEM101A	*Participate in team to achieve designated goals*	
PMAOHS210B	Undertake first response to non-fire incidents	*
PMAOHS211A	Prepare equipment for emergency response	
PMAOHS212B	Undertake first response to fire incidents	
PMAOHS213A	Undertake fire control and emergency rescue	
PMAOHS214A	Undertake helicopter safety and escape	
PMAOHS215A	Apply offshore facility abandonment and sea survival procedures	
PMAOHS216B	Operate breathing apparatus	

Unit code	Unit title	
PMAOHS220A	Provide initial first aid response	
PMAOHS221A	Maintain first aid supplies and records	
PMAOMIR205A	Control minor incidents	
PMAOMIR210A	Control evacuation to muster point	
PMAOMIR217A	Gas test atmospheres	
PMAPER200C	Work in accordance with an issued permit	
PMAPER201C	Monitor and control work permits	
PMAPER205B	Enter confined space	*
PMASUP200B	Implement production efficiencies	*
PMASUP210A	Process and record information	*
PMASUP220A	Monitor and control environmental hazards	*
PMASUP236A	Operate vehicles in the field	x
PMASUP237A	Undertake crane, dogging and load transfer operations	x
PMASUP240A	Undertake minor maintenance	
PMASUP241A	Maintain pipeline easements	
PMASUP242A	Monitor pipeline civil works	*
PMASUP243A	Monitor and maintain pipeline coatings	
PMBCOMP201B	Use computers in the workplace	
PMCSUP292A	Sample and test materials and product	
BSATEM201A	Participate in the allocation and completion of team tasks	
TDTD1097B	Operate a forklift	

It may also be appropriate to include ‘operations’ units from the previous level.

Certificate II in Process Support PMA20202

To be awarded a Certificate II in Process Support, competency must be achieved in a total of 16 units of competency comprised of:

- all 5 core units
- sufficient other units to make up the required total. These must include at least 6 units from the 2XX series of PMA02, and may include a maximum of 2 relevant units from other endorsed Training Packages.

The operation units chosen for this certificate cannot be counted towards the achievement of a second qualification at this certificate level under this Training Package. A different set of operation units must be chosen for this purpose.

Holders of a Certificate I in Process Support will need an additional 8 units of competency to those already recognised by the Certificate I. These additional 8 units of competency must be chosen so that the total units, including those carried forward from a lower level qualification, comply with the above rules.

NOTES

1. Units shown in *italics* in the tables below are also part of Certificate I.
2. Units marked * have prerequisites. See individual unit for details.
3. The customisation rules of section 4 may also need to be consulted
4. Units marked x may require a licence or 'ticket'. Check local regulations.

Core competencies

Unit code	Unit title
PMASUP110A	*Relay and respond to information*
PMASUP120A	*Follow environmental work practices*
PMASUP100B	*Apply workplace procedures*
PMAOHS110B	Respond to emergency situation
PMAOHS200B	Participate in workplace safety procedures

Operation and support competencies

Unit code	Unit title	
PMAOPS200A	Operate and monitor an item of equipment	
PMAOPS201A	Operate fluid flow equipment	
PMAOPS202A	Operate fluid mixing equipment	
PMAOPS203A	Handle goods	
PMAOPS204A	Use utilities and services	
PMAOPS205A	Operate heat exchangers	
PMAOPS206A	Operate separation equipment	
PMAOPS207A	Operate powered separation equipment	

Unit code	Unit title	
PMAOPS208A	Operate chemical separation equipment	
PMAOPS210A	Operate particulates handling equipment	
PMAOPS211A	Operate manufacturing extruders	
PMAOPS212A	Use enterprise data system	
PMAOPS213A	Package product/material	
PMAOPS216A	Operate local control system	
PMAOPS217A	Operate wet milling equipment	
PMAOPS220A	Monitor chemical reactions in the process	
PMAOPS221A	Operate and monitor prime movers	
PMAOPS222A	Operate and monitor pumping systems and equipment	
PMAOPS223A	Operate and monitor valve systems	
PMAOPS224A	Provide fluids for utilities and support	
PMAOPS230A	Monitor, operate and maintain pipeline stations and equipment	
PMAOPS231A	Control gas odourisation	*
PMAOPS232A	Produce product by filtration	
PMAOPS240A	Store liquids in bulk	
PMAOPS290A	Operate a biotreater	
FDFCORGMP2A	Implement good manufacturing practice	
PMASUP130B	*Follow established work plan*	
BSATEM101A	*Participate in team to achieve designated goals*	
PMASUP210A	Process and record information	*
PMASUP220A	Monitor and control environmental hazards	*
PMAOHS220A	Provide initial first aid response	
PMAOHS221A	Maintain first aid supplies and records	
PMAOHS210B	Undertake first response to non-fire incidents	*
PMAOHS211A	Prepare equipment for emergency response	
PMAOHS212B	Undertake first response to fire incidents	
PMAOHS213A	Undertake fire control and emergency rescue	
PMAOHS214A	Undertake helicopter safety and escape	
PMAOHS215A	Apply offshore facility abandonment and sea survival procedures	
PMAOHS216B	Operate breathing apparatus	
PMAOMIR205A	Control minor incidents	
PMAOMIR210A	Control evacuation to muster point	
PMAOMIR217A	Gas test atmospheres	
PMASMELT260A	Form carbon anodes	
PMASMELT261A	Bake carbon anodes	
PMASMELT262A	Clean and strip anode rods	
PMASMELT263A	Spray carbon anodes	
PMASMELT264A	Start up reduction cells	
PMASMELT265A	Operate reduction cells	
PMASMELT266A	Deliver molten metal	
PMASMELT267A	Cast aluminium ingots	
PMASMELT268A	Vertical Direct Casting	
PMASUP240A	Undertake minor maintenance	

Unit code	Unit title	
PMASUP241A	Maintain pipeline easements	
PMASUP242A	Monitor pipeline civil works	*
PMASUP243A	Monitor and maintain pipeline coatings	
PMAPER200C	Work in accordance with an issued permit	
PMAPER201C	Monitor and control work permits	
PMAPER205B	Enter confined space	*
PMASUP200B	Implement production efficiencies	*
PMASUP236A	Operate vehicles in the field	x
PMASUP237A	Undertake crane, dogging and load transfer operations	x
PMBCOMP201B	Use computers in the workplace	
PMCSUP292A	Sample and test materials and product	
BSATEM201A	Participate in the allocation and completion of team tasks	
TDTD1097B	Operate a forklift	

It may also be appropriate to include ‘operations’ units from the previous level.

Certificate III in Process Plant Operations PMA30102

To be awarded a Certificate III in Process Plant Operations, competency must be achieved in a total of 21 units of competency comprised of:

- all 5 core units
- at least 2 operations units from the OPS3XX series
- sufficient other units to make up the required total. These must include at least 2 units from the 3XX series of PMA02, and may include a maximum of 3 relevant units from other endorsed Training Packages.

The operation units chosen for this certificate cannot be counted towards the achievement of a second qualification at this certificate level under this Training Package. A different set of operation units must be chosen for this purpose.

Holders of a Certificate II in Process Plant Operations will need an additional 5 units of competency to those already recognised by the Certificate II if they have achieved competence in all required prerequisites.

These additional 5 units of competency must be chosen so that the total units, including those carried forward from a lower level qualification, comply with the above rules. People entering at this level must also achieve competence in any required prerequisite units, and these will be counted towards the 21 units.

NOTES

1. Units shown in *italics* in the tables below are also part of Certificate II.
2. Units marked * have prerequisites. See individual unit for details.
3. Requirements for a streamed Certificate III are listed in section 3.
4. The customisation rules of section 4 may also need to be consulted.
5. Units marked x may require a licence or ‘ticket’. Check local regulations.

Core competencies

Unit code	Unit title
PMAOHS110B	*Respond to emergency situation*
PMAOHS200B	*Participate in workplace safety procedures*
PMASUP100B	*Apply workplace procedures*
PMASUP110A	*Relay and respond to information*
PMASUP120A	*Follow environmental work practices*

Operations competencies

Unit code	Unit title	
PMAOPS300A	Operate a production unit	*
PMAOPS301A	Produce products by distillation	*
PMAOPS302A	Operate reactors and reaction equipment	*
PMAOPS303A	Operate furnaces	*
PMAOPS304A	Operate and monitor compressor systems and equipment	*
PMAOPS305A	Operate process control systems	*
PMAOPS307A	Transfer bulk fluids into/out of storage facility	*
PMAOPS308A	Organise storage and logistics of general materials	
PMAOPS309A	Operate particulates handling/storage equipment	*
PMAOPS312A	Undertake ship loading/unloading operations	*
PMAOPS320A	Conduct artificial lift	
PMAOPS321A	Undertake well management	*
PMAOPS325A	Generate electrical power	*
PMAOPS326A	Produce product using gas absorption	
PMAOPS327A	Produce product using fixed bed dehydration	
PMAOPS329A	Produce product using liquid extraction	
PMAOPS330A	Communicate pipeline control centre operations	
PMAOPS340A	Operate cryogenic processes	*
PMAOPS350A	Match and adjust colour	
PMAOPS390A	Operate a biochemical process	
FDFCORGMP3A	Monitor the implementation of good manufacturing practice	
UTPNEG162A	Operate and monitor boiler steam/water cycle	
UTPNEG210A	Manage, operate and monitor turbine	

Support competencies

Unit code	Unit title	
PMASUP130B	*Follow established work plan*	
BSATEM101A	*Participate in team to achieve designated goals*	
PMAOHS210B	*Undertake first response to non-fire incidents*	*
PMAOHS211A	*Prepare equipment for emergency response*	
PMAOHS212B	*Undertake first response to fire incidents*	
PMAOHS213A	*Undertake fire control and emergency rescue*	
PMAOHS214A	*Undertake helicopter safety and escape*	
PMAOHS215A	*Apply offshore facility abandonment and sea survival procedures*	
PMAOHS216B	*Operate breathing apparatus*	
PMAOHS220A	*Provide initial first aid response*	
PMAOHS221A	*Maintain first aid supplies and records*	
PMAOMIR205A	*Control minor incidents*	
PMAOMIR210A	*Control evacuation to muster point*	
PMAOMIR217A	*Gas test atmospheres*	
PMAPER200C	*Work in accordance with an issued permit*	

Unit code	Unit title	
PMAPER201C	*Monitor and control work permits*	
PMAPER205B	*Enter confined space*	*
PMASUP200B	*Implement production efficiencies*	*
PMASUP210A	*Process and record information*	*
PMASUP220A	*Monitor and control environmental hazards*	*
PMASUP236A	*Operate vehicles in the field*	x
PMASUP237A	*Undertake crane, dogging and load transfer operations*	x
PMASUP240A	*Undertake minor maintenance*	
PMASUP241A	*Maintain pipeline easements*	
PMASUP242A	*Monitor pipeline civil works*	*
PMASUP243A	*Monitor and maintain pipeline coatings*	
PMBCOMP201B	*Use computers in the workplace*	
PMCSUP292A	*Sample and test materials and product*	
BSATEM201A	*Participate in the allocation and completion of team tasks*	
TDTD1097B	*Operate a forklift*	
PMAOHS300B	Implement and monitor OHS policies and procedures for a workgroup	*
PMAOHS310A	Investigate incidents	
PMAOHS311A	Lead emergency teams	
PMAOHS312A	Command the operation of survival craft	
PMAOHS320B	Provide advanced first aid response	*
PMAOHS321A	Provide first aid response in remote and/or isolated area	*
PMAOMIR301A	Undertake initial rescue	*
PMAOMIR302A	Respond to a helideck incident	
PMAOMIR317A	Facilitate search and rescue operations	
PMAOMIR320A	Manage incident response information	
PMAOMIR321A	Manage communication systems during an incident	
PMAOMIR346A	Assess and secure an incident site	
PMAPER300C	Issue work permits	
PMAPER302B	Issue work permits (hot work/confined space)	
PMASUP300B	Identify and implement opportunities to maximise production efficiencies	*
PMASUP320A	Implement and monitor environmental policies	*
PMASUP330B	Schedule production	*
PMASUP340A	Conduct pipeline pigging	
PMASUP341A	Monitor and maintain instrument and control systems	*
PMASUP342A	Monitor and maintain electrical systems	*
PMASUP343A	Monitor and maintain cathodic protection systems	
PMASUP344A	Monitor and control repairs and modifications on operational pipe	
PMASUP390A	Use structured problem solving tools	
PMBMAINT303B	Identify equipment faults	
PMLTEST300A	Perform basic tests	
BSATEM301A	Negotiate with team members to allocate and complete tasks	

Unit code	Unit title	
PUASAR003A	Undertake technical rescue	
PUASAR004A	Undertake technical rescue	
PUAFIR306A	Render hazardous materials safe	
PSPGOV308A	Work effectively with diversity	

It may also be appropriate to include 'operation' units from the previous level.

Certificate III in Process Support PMA30202

To be awarded a Certificate III in Process Support competency must be achieved in a total of 21 units of competency comprised of:

- all 5 core units
- sufficient other units to make up the required total. These must include at least 4 units from the 3XX series of PMA02, and may include a maximum of 3 relevant units from other endorsed Training Packages.

The operation units chosen for this certificate cannot be counted towards the achievement of a second qualification at this certificate level under this Training Package. A different set of operation units must be chosen for this purpose.

Holders of a Certificate II in Process Support will need an additional 5 units of competency to those already recognised by the Certificate II if they have achieved competence in all required prerequisites. These additional 5 units of competency must be chosen so that the total units, including those carried forward from a lower level qualification, comply with the above rules.

People entering at this level must also achieve competence in any required prerequisite units, and these will be counted towards the 21 units.

NOTES

1. Units shown in *italics* in the tables below are also part of Certificate II.
2. Units marked * have prerequisites. See individual unit for details.
3. The customisation rules of section 4 may also need to be consulted.
4. Units marked x may require a licence or 'ticket'. Check local regulations.

Core competencies

Unit code	Unit title
PMASUP110A	*Relay and respond to information*
PMASUP120A	*Follow environmental work practices*
PMASUP100B	*Apply workplace procedures*
PMAOHS110B	*Respond to emergency situation*
PMAOHS200B	*Participate in workplace safety procedures*

Operation and support competencies

Unit code	Unit title	
PMAOPS300A	Operate a production unit	*
PMAOPS301A	Produce products by distillation	
PMAOPS302A	Operate reactors and reaction equipment	*
PMAOPS303A	Operate furnaces	*
PMAOPS304A	Operate and monitor compressor systems and equipment	*
PMAOPS305A	Operate process control systems	*
PMAOPS307A	Transfer bulk fluids into/out of storage facility	
PMAOPS308A	Organise storage and logistics of general materials	
PMAOPS309A	Operate particulates handling/storage equipment	
PMAOPS312A	Undertake ship loading/unloading operations	
PMAOPS320A	Conduct artificial lift	
PMAOPS321A	Undertake well management	*
PMAOPS325A	Generate electrical power	*
PMAOPS326A	Produce product using gas absorption	
PMAOPS327A	Produce product using fixed bed dehydration	
PMAOPS329A	Produce product using liquid extraction	
PMAOPS330A	Communicate pipeline control centre operations	
PMAOPS340A	Operate cryogenic processes	*
PMAOPS350A	Match and adjust colour	
PMAOPS390A	Operate a biochemical process	
FDFCORGMP3A	Monitor the implementation of good manufacturing practice	
UTPNEG162A	Operate and monitor boiler steam/water cycle	
UTPNEG210A	Manage, operate and monitor turbine	
PMASUP130B	*Follow established work plan*	
BSATEM101A	*Participate in team to achieve designated goals*	
PMAOHS210B	*Undertake first response to non-fire incidents*	*
PMAOHS211A	*Prepare equipment for emergency response*	
PMAOHS212B	*Undertake first response to fire incidents*	
PMAOHS213A	*Undertake fire control and emergency rescue*	
PMAOHS214A	*Undertake helicopter safety and escape*	
PMAOHS215A	*Apply offshore facility abandonment and sea survival procedures*	
PMAOHS216B	*Operate breathing apparatus*	
PMAOHS220A	*Provide initial first aid response*	
PMAOHS221A	*Maintain first aid supplies and records*	
PMAOMIR205A	*Control minor incidents*	
PMAOMIR210A	*Control evacuation to muster point*	
PMAOMIR217A	*Gas test atmospheres*	
PMAPER200C	*Work in accordance with an issued permit*	
PMAPER201C	*Monitor and control work permits*	
PMAPER205B	*Enter confined space*	*
PMASUP200B	*Implement production efficiencies*	*
PMASUP210A	*Process and record information*	*
PMASUP220A	*Monitor and control environmental hazards*	*

Unit code	Unit title	
PMASUP236A	*Operate vehicles in the field*	x
PMASUP237A	*Undertake crane, dogging and load transfer operations*	x
PMASUP240A	*Undertake minor maintenance*	
PMASUP241A	*Maintain pipeline easements*	
PMASUP242A	*Monitor pipeline civil works*	*
PMASUP243A	*Monitor and maintain pipeline coatings*	
PMBCOMP201B	*Use computers in the workplace*	
PMCSUP292A	*Sample and test materials and product*	
BSATEM201A	*Participate in the allocation and completion of team tasks*	
TDTD1097B	*Operate a forklift*	
PMAOMIR301A	Undertake initial rescue	*
PMAOMIR302A	Respond to a helideck incident	
PMAOMIR317A	Facilitate search and rescue operations	
PMAOMIR320A	Manage incident response information	
PMAOMIR321A	Manage communication systems during an incident	
PMAOMIR346A	Assess and secure an incident site	
PMAOHS300B	Implement and monitor OHS policies and procedures for a workgroup	*
PMAOHS310A	Investigate incidents	
PMAOHS311A	Lead emergency teams	
PMAOHS312A	Command the operation of survival craft	
PMAOHS320B	Provide advanced first aid response	*
PMAOHS321A	Provide first aid response in remote and/or isolated area	*
PMAPER300C	Issue work permits	
PMAPER302B	Issue work permits (hot work/confined space)	
PMASUP300B	Identify and implement opportunities to maximise production efficiencies	*
PMASUP320A	Implement and monitor environmental policies	*
PMASUP330B	Schedule production	*
PMASUP340A	Conduct pipeline pigging	
PMASUP341A	Monitor and maintain instrument and control systems	*
PMASUP342A	Monitor and maintain electrical systems	*
PMASUP343A	Monitor and maintain cathodic protection systems	
PMASUP344A	Monitor and control repairs and modifications on operational pipe	
PMASUP390A	Use structured problem solving tools	
PMBMAINT303B	Identify equipment faults	
PMLTEST300A	Perform basic tests	
BSATEM301A	Negotiate with team members to allocate and complete tasks	
PUASAR003A	Undertake technical rescue	
PUASAR004A	Undertake technical rescue	
PUAFIR306A	Render hazardous materials safe	
PSPGOV308A	Work effectively with diversity	

It may also be appropriate to include ‘operation’ units from the previous level.

Certificate IV in Process Plant Technology PMA40102

There is no streamed Certificate IV qualification. This qualification is for plant technicians. People for whom this qualification is not relevant may be better served by qualifications from other Training Packages (for example, non-technical team leaders, coordinators and supervisors may be better served by a qualification in frontline management).

To be awarded a Certificate IV in Process Plant Technology, competency must be achieved in a total of 26 units of competency comprised of:

- all 5 core units
- at least 1 operations unit from the OPS4XX series
- sufficient other units to make up the required total. These must include at least 2 units from the 4XX series of PMA02 and a further 2 units from either the 3XX or 4XX series of PMA02, and may include a maximum of 5 relevant units from other endorsed Training Packages.

Holders of the Certificate III in Process Plant Operations will need an additional 5 units of competency to those already recognised by the Certificate III, if they have achieved competence in all required prerequisites. These additional 5 units of competency must be chosen so that the total units, including those carried forward from a lower level qualification, comply with the above rules.

People entering at this level must also achieve competence in any required prerequisite units, and these will be counted towards the 26 units.

NOTES

1. Units shown in *italics* in the tables below are also part of Certificate III.
2. Units marked * have prerequisites. See individual unit for details.
3. There are no streamed qualifications at Certificate IV.
4. The customisation rules of section 4 may also need to be consulted.
5. Units marked x may require a licence or ‘ticket’. Check local regulations.

Core competencies

Unit code	Unit title
PMASUP110A	*Relay and respond to information*
PMASUP120A	*Follow environmental work practices*
PMASUP100B	*Apply workplace procedures*
PMAOHS110B	*Respond to emergency situation*
PMAOHS200B	*Participate in workplace safety procedures*

Operation/technical competencies

Unit code	Unit title	
PMAOPS400A	Optimise operating systems	*
PMAOPS401B	Trial new process/product	*
PMAOPS410A	Monitor remote production facilities	*
PMAOPS411A	Manage plant shutdown and restart	*
PMAOPS450A	Solve colour problems	

Support competencies

Unit code	Unit title	
PMASUP130B	*Follow established work plan*	
BSATEM101A	*Participate in team to achieve designated goals*	
PMAOHS210B	*Undertake first response to non-fire incidents*	*
PMAOHS211A	*Prepare equipment for emergency response*	
PMAOHS212B	*Undertake first response to fire incidents*	
PMAOHS213A	*Undertake fire control and emergency rescue*	
PMAOHS214A	*Undertake helicopter safety and escape*	
PMAOHS215A	*Apply offshore facility abandonment and sea survival procedures*	
PMAOHS216B	*Operate breathing apparatus*	
PMAOHS220A	*Provide initial first aid response*	
PMAOHS221A	*Maintain first aid supplies and records*	
PMAOMIR205A	*Control minor incidents*	
PMAOMIR210A	*Control evacuation to muster point*	
PMAOMIR217A	*Gas test atmospheres*	
PMAPER200C	*Work in accordance with an issued permit*	
PMAPER201C	*Monitor and control work permits*	
PMAPER205B	*Enter confined space*	*
PMASUP200B	*Implement production efficiencies*	*
PMASUP210A	*Process and record information*	*
PMASUP220A	*Monitor and control environmental hazards*	*
PMASUP236A	*Operate vehicles in the field*	x
PMASUP237A	*Undertake crane, dogging and load transfer operations*	x
PMASUP240A	*Undertake minor maintenance*	
PMASUP241A	*Maintain pipeline easements*	
PMASUP242A	*Monitor pipeline civil works*	*
PMASUP243A	*Monitor and maintain pipeline coatings*	
PMBCOMP201B	*Use computers in the workplace*	
PMCSUP292A	*Sample and test materials and product*	
BSATEM201A	*Participate in the allocation and completion of team tasks*	
TDTD1097B	*Operate a forklift*	
PMAOHS300B	*Implement and monitor OHS policies and procedures for a workgroup*	*
PMAOHS310A	*Investigate incidents*	
PMAOHS311A	*Lead emergency teams*	
PMAOHS312A	*Command the operation of survival craft*	

Unit code	Unit title	
PMAOHS320B	*Provide advanced first aid response*	*
PMAOHS321A	*Provide first aid response in remote and/or isolated area*	*
PMAPER300C	*Issue work permits*	
PMAPER302B	*Issue work permits (hot work/confined space)*	
PMAOMIR301A	*Undertake initial rescue*	*
PMAOMIR302A	*Respond to a helideck incident*	
PMAOMIR317A	*Facilitate search and rescue operations*	
PMAOMIR320A	*Manage incident response information*	
PMAOMIR321A	*Manage communication systems during an incident*	
PMAOMIR346A	*Assess and secure an incident site*	
PMASUP300B	*Identify and implement opportunities to maximise production efficiencies*	*
PMASUP320A	*Implement and monitor environmental policies*	*
PMASUP320A	*Minimise environmental impact of process*	*
PMASUP330B	*Schedule production*	*
PMASUP340A	*Conduct pipeline pigging*	
PMASUP341A	*Monitor and maintain instrument and control systems*	*
PMASUP342A	*Monitor and maintain electrical systems*	*
PMASUP343A	*Monitor and maintain cathodic protection systems*	
PMASUP344A	*Monitor and control repairs and modifications on operational pipe*	
PMASUP390A	*Use structured problem solving tools*	
PMBMAINT303B	*Identify equipment faults*	
PMLTEST300A	*Perform basic tests*	
BSATEM301A	*Negotiate with team members to allocate and complete tasks*	
PSPGOV308A	*Work effectively with diversity*	
PUASAR003A	*Undertake technical rescue*	
PUASAR004A	*Undertake technical rescue*	
PUAFIR306A	*Render hazardous materials safe*	
PMAOHS400B	Contribute to workplace OHS management system	*
PMAOHS401B	Assess risk	
PMAOHS410B	Manage emergency incidents	*
PMAOHS420A	Develop first aid procedures and manage resources	
PMAOMIR407A	Audit incident preparedness and established response system	
PMAOMIR418A	Coordinate incident response	
PMAOMIR424A	Develop and maintain community relationships	
PMAOMIR430A	Conduct and assess incident exercises	
PMAOMIR444A	Develop incident containment tactics	
PMAOMIR449A	Monitor legal compliance obligations during incidents	
PMASUP410A	Develop plant documentation	*
PMASUP420A	Minimise environmental impact of process	*
PMASUP432A	Coordinate pipeline projects	
PMASUP440A	Commission/recommission plant	*
PMASUP441B	Decommission plant	*

Unit code	Unit title	
PMLSAMP400A	Obtain representative samples in accordance with a sampling plan	
NZQF9597	Undertake corrosion inspection in a petrochemical environment	
NZQF9630	Demonstrate knowledge of HAZOP study and QRA in a petrochemical environment	
BSBCMN402A	Develop work priorities	
BSBCMN404A	Develop teams and individuals	
BSBCMN410A	Coordinate implementation of customer service strategies	
BSBCMN412A	Promote innovation and change	
BSBFLM402A	Show leadership in the workplace	
BSBFLM403A	Manage effective workplace relationships	
BSBFLM404A	Lead work teams	
BSBFLM405A	Implement operational plan	
BSBFLM406A	Implement workplace information system	
BSBFLM409A	Implement continuous improvement	
BSZ401A; BSZ402A; BSZ403A	Plan, conduct, review assessment	
BSZ404A	Train small groups	

It may also be appropriate to include ‘operation’ units from the previous level.

Diploma of Process Plant Technology PMA50102

There is no streamed diploma qualification. This qualification is for a plant technologist. People for whom this qualification is not relevant may be better served by qualifications from other Training Packages (for example non-technical team leaders, coordinators and supervisors may be better served by a qualification in frontline management).

To be awarded a Diploma of Process Plant Technology, competency must be achieved in a total of 32 units of competency comprised of:

- all 5 core units
- at least 2 operations unit from the OPS5XX series
- sufficient other units to make up the required total. These must include at least 2 units from the 5XX series of PMA02 and a further 2 units from either the 4XX or 5XX series of PMA02, and may include a maximum of 6 relevant units from other endorsed Training Packages.

Holders of a Certificate IV in Process Plant Technology will need an additional 5 units of competency to those already recognised by the Certificate IV, if they have achieved competence in all required prerequisites. These additional 5 units of competency must be chosen so that the total units, including those carried forward from a lower level qualification, comply with the above rules.

People entering at this level must also achieve competence in any required prerequisite units, and these will be counted towards the 32 units.

NOTES

1. Units shown in *italics* in the tables below are also part of Certificate IV
2. Units marked * have prerequisites. See individual unit for details
3. There are no streamed qualifications at Diploma level
4. The customisation rules of section 4 may also need to be consulted.
5. Units marked x may require a licence or 'ticket'. Check local regulations.

Core competencies

Unit code	Unit title
PMASUP110A	*Relay and respond to information*
PMASUP120A	*Follow environmental work practices*
PMASUP100B	*Apply workplace procedures*
PMAOHS110B	*Respond to emergency situation*
PMAOHS200B	*Participate in workplace safety procedures*

Operation/technical competencies

Unit code	Unit title	
PMAOPS511A	Determine energy transfer loads	
PMAOPS512A	Determine mass transfer loads	
PMAOPS520B	Manage utilities	
PMAOPS521B	Plan plant shutdown	*
PMAOPS550A	Develop a colour formulation	*

Support competencies

Unit code	Unit title	
PMASUP130B	*Follow established work plan*	
BSATEM101A	*Participate in team to achieve designated goals*	
PMAOHS210B	*Undertake first response to non-fire incidents*	*
PMAOHS211A	*Prepare equipment for emergency response*	
PMAOHS212B	*Undertake first response to fire incidents*	
PMAOHS213A	*Undertake fire control and emergency rescue*	
PMAOHS214A	*Undertake helicopter safety and escape*	
PMAOHS215A	*Apply offshore facility abandonment and sea survival procedures*	
PMAOHS216B	*Operate breathing apparatus*	
PMAOHS220A	*Provide initial first aid response*	
PMAOHS221A	*Maintain first aid supplies and records*	
PMAPER200C	*Work in accordance with an issued permit*	
PMAPER201C	*Monitor and control work permits*	
PMAPER205B	*Enter confined space*	*
PMASUP200B	*Implement production efficiencies*	*
PMASUP210A	*Process and record information*	*
PMASUP220A	*Monitor and control environmental hazards*	*
PMASUP236A	*Operate vehicles in the field*	x
PMASUP237A	*Undertake crane, dogging and load transfer operations*	x
PMASUP240A	*Undertake minor maintenance*	
PMASUP241A	*Maintain pipeline easements*	
PMASUP242A	*Monitor pipeline civil works*	*
PMASUP243A	*Monitor and maintain pipeline coatings*	
PMBCOMP201B	*Use computers in the workplace*	
PMCSUP292A	*Sample and test materials and product*	
BSATEM201A	*Participate in the allocation and completion of team tasks*	
TDTD1097B	*Operate a forklift*	
PMAOMIR205A	*Control minor incidents*	
PMAOMIR210A	*Control evacuation to muster point*	
PMAOMIR217A	*Gas test atmospheres*	
PMAOHS300B	*Implement and monitor OHS policies and procedures for a workgroup*	*
PMAOHS310A	*Investigate incidents*	
PMAOHS311A	*Lead emergency teams*	
PMAOHS312A	*Command the operation of survival craft*	

Unit code	Unit title	
PMAOHS320B	*Provide advanced first aid response*	*
PMAOHS321A	*Provide first aid response in remote and/or isolated area*	*
PMAOMIR301A	*Undertake initial rescue*	*
PMAOMIR302A	*Respond to a helideck incident*	
PMAOMIR317A	*Facilitate search and rescue operations*	
PMAOMIR320A	*Manage incident response information*	
PMAOMIR321A	*Manage communication systems during an incident*	
PMAOMIR346A	*Assess and secure an incident site*	
PMAPER300C	*Issue work permits*	
PMAPER302B	*Issue work permits (hot work/confined space)*	
PMASUP300B	*Identify and implement opportunities to maximise production efficiencies*	*
PMASUP320A	*Implement and monitor environmental policies*	*
PMASUP320A	*Minimise environmental impact of process*	*
PMASUP330B	*Schedule production*	*
PMASUP340A	*Conduct pipeline pigging*	
PMASUP341A	*Monitor and maintain instrument and control systems*	*
PMASUP342A	*Monitor and maintain electrical systems*	*
PMASUP343A	*Monitor and maintain cathodic protection systems*	
PMASUP344A	*Monitor and control repairs and modifications on operational pipe*	
PMASUP390A	*Use structured problem solving tools*	
PMBMAINT303B	*Identify equipment faults*	
PMLTEST300A	*Perform basic tests*	
BSATEM301A	*Negotiate with team members to allocate and complete tasks*	
PSPGOV308A	*Work effectively with diversity*	
PMAOHS400B	*Contribute to workplace OHS management system*	*
PMAOHS401B	*Assess risk*	
PMAOHS410B	*Manage emergency incidents*	
PMAOHS420A	*Develop first aid procedures and manage resources*	
PMASUP410A	*Develop plant documentation*	*
PMAOMIR407A	*Audit incident preparedness and established response system*	
PMAOMIR418A	*Coordinate incident response*	
PMAOMIR424A	*Develop and maintain community relationships*	
PMAOMIR430A	*Conduct and assess incident exercises*	
PMAOMIR444A	*Develop incident containment tactics*	
PMAOMIR449A	*Monitor legal compliance obligations during incidents*	
PMASUP420A	*Minimise environmental impact of process*	*
PMASUP432A	*Coordinate pipeline projects*	
PMASUP440A	*Commission/recommission plant*	*
PMASUP441B	*Decommission plant*	*
PMLSAMP400A	*Obtain representative samples in accordance with a sampling plan*	

Unit code	Unit title	
NZQF9630	*Demonstrate knowledge of HAZOP study and QRA in a petrochemical environment*	
NXQF9597	*Undertake corrosion inspection in a petrochemical environment*	
BSBCMN402A	*Develop work priorities*	
BSBCMN404A	*Develop teams and individuals*	
BSBCMN410A	*Coordinate implementation of customer service strategies*	
BSBCMN412A	*Promote innovation and change*	
BSBFLM402A	*Show leadership in the workplace*	
BSBFLM403A	*Manage effective workplace relationships*	
BSBFLM404A	*Lead work teams*	
BSBFLM405A	*Implement operational plan*	
BSBFLM406A	*Implement workplace information system*	
BSBFLM409A	*Implement continuous improvement*	
BSZ401A,BSZ402A, BSZ403A	*Plan, conduct, review assessment*	
BSZ404A	*Train small groups*	
PUASAR003A	*Undertake technical rescue*	
PUASAR004A	*Undertake technical rescue*	
PUAFIR306A	*Render hazardous materials safe*	
PMAOHS503A	Maintain workplace OHS management system	nil
PMAOHS502A	Contribute to safety case	
PMAOHS510B	Manage risk	*
PMAOMIR512A	Establish incident response preparedness and response systems	
PMAOMIR523A	Manage corporate media requirements in a crisis	
PMAOMIR575A	Coordinate welfare support activities in response to an incident	
PMASUP520A	Review procedures to minimise environmental impact of processes	*
PMASUP540A	Analyse equipment performance	
BSBFLM504A	Facilitate work teams	
BSBFLM505A	Manage operational plan	
BSBFLM509A	Promote continuous improvement	
BSBFLM510A	Facilitate and capitalise on change and innovation	
BSBFLM511A	Develop a workplace learning environment	

It may also be appropriate to include ‘operation’ units from the previous level.

Advanced Diploma of Process Plant Technology PMA60102

There is no streamed advanced diploma qualification. This qualification is for a process plant technologist. People for whom this qualification is not relevant may be better served by qualifications from other Training Packages (for example, non-technical team leaders, coordinators and supervisors may be better served by a qualification in frontline management).

To be awarded an Advanced Diploma of Process Plant Technology, competency must be achieved in a total of 37 units of competency comprised of:

- all 5 core units
- at least 1 operations unit from the OPS6XX series
- sufficient other units to make up the required total. These must include at least 1 unit from the 6XX series of PMA02 and a further 2 units from either the 5XX or 6XX series of PMA02, and may include a maximum of 7 relevant units from other endorsed Training Packages.

Holders of a Diploma of Process Plant Technology will need an additional 5 units of competency to those already recognised by the Diploma, if they have achieved competence in all required prerequisites. These additional 5 units of competency must be chosen so that the total units, including those carried forward from a lower level qualification, comply with the above rules.

People entering at this level must also achieve competence in any required prerequisite units, and these will be counted towards the 37 units.

NOTES

1. Units shown in *italics* in the tables below are also part of the Diploma.
2. Units marked * have prerequisites. See individual unit for details.
3. There are no streamed qualifications at Advanced Diploma level.
4. The customisation rules of section 4 may also need to be consulted.
5. Units marked x may require a licence or ‘ticket’. Check local regulations.

Core competencies

Unit code	Unit title
PMASUP110A	*Relay and respond to information*
PMASUP120A	*Follow environmental work practices*
PMASUP100B	*Apply workplace procedures*
PMAOHS110B	*Respond to emergency situation*
PMAOHS200B	*Participate in workplace safety procedures*

Technical/operation competencies

Unit code	Unit title	
PMAOPS600B	Modify plant	*

Support competencies

Unit code	Unit title	
PMASUP130B	*Follow established work plan*	
BSATEM101A	*Participate in team to achieve designated goals*	
PMAOHS210B	*Undertake first response to non-fire incidents*	*
PMAOHS211A	*Prepare equipment for emergency response*	
PMAOHS212B	*Undertake first response to fire incidents*	
PMAOHS213A	*Undertake fire control and emergency rescue*	
PMAOHS214A	*Undertake helicopter safety and escape*	
PMAOHS215A	*Apply offshore facility abandonment and sea survival procedures*	
PMAOHS216B	*Operate breathing apparatus*	
PMAOHS220A	*Provide initial first aid response*	
PMAOHS221A	*Maintain first aid supplies and records*	
PMAOMIR205A	*Control minor incidents*	
PMAOMIR210A	*Control evacuation to muster point*	
PMAOMIR217A	*Gas test atmospheres*	
PMAPER200C	*Work in accordance with an issued permit*	
PMAPER201C	*Monitor and control work permits*	
PMAPER205B	*Enter confined space*	*
PMASUP200B	*Implement production efficiencies*	*
PMASUP210A	*Process and record information*	*
PMASUP220A	*Monitor and control environmental hazards*	*
PMASUP236A	*Operate vehicles in the field*	x
PMASUP237A	*Undertake crane, dogging and load transfer operations*	x
PMASUP240A	*Undertake minor maintenance*	
PMASUP241A	*Maintain pipeline easements*	
PMASUP242A	*Monitor pipeline civil works*	*
PMASUP243A	*Monitor and maintain pipeline coatings*	
PMBCOMP201B	*Use computers in the workplace*	
PMCSUP292A	*Sample and test materials and product*	
BSATEM201A	*Participate in the allocation and completion of team tasks*	
TDTD1097B	*Operate a forklift*	
PMAOHS300B	*Implement and monitor OHS policies and procedures for a workgroup*	*
PMAOHS310A	*Investigate incidents*	
PMAOHS311A	*Lead emergency teams*	
PMAOHS312A	*Command the operation of survival craft*	
PMAOHS320B	*Provide advanced first aid response*	*
PMAOHS321A	*Provide first aid response in remote and/or isolated area*	*

Unit code	**Unit title**	
PMAOMIR301A	*Undertake initial rescue*	*
PMAOMIR302A	*Respond to a helideck incident*	
PMAOMIR317A	*Facilitate search and rescue operations*	
PMAOMIR320A	*Manage incident response information*	
PMAOMIR321A	*Manage communication systems during an incident*	
PMAOMIR346A	*Assess and secure an incident site*	
PMAPER300C	*Issue work permits*	
PMAPER302B	*Issue work permits (hot work/confined space)*	
PMASUP300B	*Identify and implement opportunities to maximise production efficiencies*	*
PMASUP320A	*Implement and monitor environmental policies*	*
PMASUP330B	*Schedule production*	*
PMASUP340A	*Conduct pipeline pigging*	
PMASUP341A	*Monitor and maintain instrument and control systems*	*
PMASUP342A	*Monitor and maintain electrical systems*	*
PMASUP343A	*Monitor and maintain cathodic protection systems*	
PMASUP344A	*Monitor and control repairs and modifications on operational pipe*	
PMASUP390A	*Use structured problem solving tools*	
PMBMAINT303B	*Identify equipment faults*	
PMLTEST300A	*Perform basic tests*	
BSATEM301A	*Negotiate with team members to allocate and complete tasks*	
PSPGOV308A	*Work effectively with diversity*	
PMAOHS400B	*Contribute to workplace OHS management system*	*
PMAOHS401B	*Assess risk*	
PMAOHS410B	*Manage emergency incidents*	
PMAOHS420A	*Develop first aid procedures and manage resources*	
PMAOMIR407A	*Audit incident preparedness and established response system*	
PMAOMIR418A	*Coordinate incident response*	
PMAOMIR424A	*Develop and maintain community relationships*	
PMAOMIR430A	*Conduct and assess incident exercises*	
PMAOMIR444A	*Develop incident containment tactics*	
PMAOMIR449A	*Monitor legal compliance obligations during incidents*	
PMASUP410A	*Develop plant documentation*	*
PMASUP420A	*Minimise environmental impact of process*	*
PMASUP432A	*Coordinate pipeline projects*	
PMASUP440A	*Commission/recommission plant*	*
PMASUP441B	*Decommission plant*	*
PMLSAMP400A	*Obtain representative samples in accordance with a sampling plan*	
NZQF9630	*Demonstrate knowledge of HAZOP study and QRA in a petrochemical environment*	
NXQF9597	*Undertake corrosion inspection in a petrochemical environment*	

Unit code	**Unit title**	
BSBCMN402A	*Develop work priorities*	
BSBCMN404A	*Develop teams and individuals*	
BSBCMN410A	*Coordinate implementation of customer service strategies*	
BSBCMN412A	*Promote innovation and change*	
BSBFLM402A	*Show leadership in the workplace*	
BSBFLM403A	*Manage effective workplace relationships*	
BSBFLM404A	*Lead work teams*	
BSBFLM405A	*Implement operational plan*	
BSBFLM406A	*Implement workplace information system*	
BSBFLM409A	*Implement continuous improvement*	
BSZ401A; BSZ402A; BSZ403A	*Plan, conduct, review assessment*	
BSZ404A	*Train small groups*	
PMAOHS503A	*Maintain workplace OHS management system*	*nil*
PMAOHS502A	*Contribute to safety case*	*
PMAOHS510A	*Manage risk*	*
PMAOMIR512A	*Establish incident response preparedness and response systems*	
PMAOMIR523A	*Manage corporate media requirements in a crisis*	
PMAOMIR575A	*Coordinate welfare support activities in response to an incident*	
PMASUP520A	*Review procedures to minimise environmental impact of processes*	*
PMASUP540A	*Analyse equipment performance*	
BSBFLM504A	*Facilitate work teams*	
BSBFLM505A	*Manage operational plan*	
BSBFLM509A	*Promote continuous improvement*	
BSBFLM510A	*Facilitate and capitalise on change and innovation*	
BSBFLM511A	*Develop a workplace learning environment*	
PMAOMIR622A	Build partnerships to improve incident response capacity	
PMAOMIR650A	Manage a crisis	
PMAOHS601A	Establish workplace OHS management system	*
PUASAR003A	*Undertake technical rescue*	
PUASAR004A	*Undertake technical rescue*	
PUAFIR306A	*Render hazardous materials safe*	
PMASUP620A	Manage environmental management system	*
PSPMNGT604A	Manage change	
PSPMNGT605A	Manage diversity	

It may also be appropriate to include ‘operation’ units from the previous level.

Packaging for a streamed qualification

This Training Package provides for a number of qualifications streamed by industry sector within the qualifications specified in the previous section. The requirements for a streamed qualification are contained in this section. Streaming is only provided for Certificates II and III. If the streamed qualifications do not totally meet your requirements, then the generic qualification as described in section 2, *Packaging advice,* and possibly the *Customising advice* of section 4 need to be used.

This section summarises typical operation competencies which an operator will choose to obtain a streamed Certificate II and/or III. This list should be taken as indicative only of job requirements and should not preclude the use of any other relevant unit of competency. While most jobs fit neatly within a stream, some will legitimately fall across a number of 'typical streams' and some will fall outside any 'typical stream'. Nothing in this section should limit the application of the *Packaging advice* of section 2.

Note that all the requirements of section 2, *Packaging advice,* also apply here. This section in no way increases or decreases the number of core units, operations units or the total number of units needed for a qualification.

It does however restrict the choice of operations units for a **streamed qualification** by requiring particular operations units to be chosen.

The Certificate I, Certificate IV, Diploma and Advanced Diploma are not available as streamed qualifications. See section 2 for details.

Note that a streamed qualification cannot change the title of the qualification. RTOs must be compliant with the ATQF requirements. The qualification or statement of attainment should clearly specify the competency units achieved and where appropriate, the stream.

Certificate II in Process Plant Operations PMA20102

(Chemical and Oil)

Within the requirements for the awarding of a Certificate II in Process Plant Operations choose at least 3 of:

Unit code	Unit title
PMAOPS200A	Operate and monitor an item of equipment
PMAOPS201A	Operate fluid flow equipment
PMAOPS202A	Operate fluid mixing equipment
PMAOPS203A	Handle goods
PMAOPS204A	Operate and monitor flare, instrument air and nitrogen services
PMAOPS205A	Operate heat exchangers
PMAOPS206A	Operate separation equipment
PMAOPS207A	Operate powered separation equipment
PMAOPS208A	Operate chemical separation equipment
PMAOPS210A	Operate particulates handling equipment
PMAOPS211A	Operate manufacturing extruders
PMAOPS212A	Use data to make operating decisions
PMAOPS213A	Package product/material
PMAOPS216A	Process control
PMAOPS217A	Operate wet milling equipment
PMAOPS220A	Monitor chemical reactions in the process
PMAOPS221A	Operate and monitor prime movers
PMAOPS222A	Operate and monitor pumping systems and equipment
PMAOPS223A	Operate and monitor valve systems
PMAOPS240A	Store liquids in bulk
PMAOPS290A	Operate a biotreater
FDFCORGMP2A	Implement good manufacturing practice

Certificate III in Process Plant Operations PMA30102 (Chemical and Oil)

NOTE: Units marked * have prerequisites. See individual unit for details.

Within the requirements for the awarding of a Certificate III in Process Plant Operations choose at least 2 of:

Unit code	Unit title	
PMAOPS300A	Operate a production unit	*
PMAOPS301A	Produce distilled product	*
PMAOPS302A	Operate reactors and reaction equipment	*
PMAOPS303A	Operate furnaces	*
PMAOPS304A	Operate and monitor compressor systems and equipment	*
PMAOPS305A	Operate process control systems	*
PMAOPS307A	Transfer product into land or sea based storage facility	*
PMAOPS308A	Organise work operations	
PMAOPS309A	Manage bulk particulate storage	*
PMAOPS312A	Undertake ship loading/unloading operations	*
PMAOPS340A	Operate cryogenic processes	*
PMAOPS350A	Match and adjust colour	
PMAOPS390A	Operate a biochemical process	
FDFCORGMP3A	Monitor the implementation of good manufacturing practice	
UTPNEG162A	Operate and monitor boiler steam/water cycle	
UTPNEG210A	Manage, operate and monitor turbine	

Certificate II in Process Plant Operations PMA20102 (Hydrocarbons Extraction)

NOTE: Units marked * have prerequisites. See individual unit for details.

Within the requirements for the awarding of a Certificate II in Process Plant Operations choose at least 3 of:

Unit code	Unit title
PMAOPS200A	Operate and monitor an item of equipment
PMAOPS221A	Operate and monitor prime movers
PMAOPS222A	Operate and monitor pumping systems and equipment
PMAOPS223A	Operate and monitor valve systems
PMAOPS224A	Operate and monitor process support systems
PMAOPS232A	Produce product by filtration
PMAOPS240A	Store liquids in bulk

Certificate III in Process Plant Operations PMA30102 (Hydrocarbons Extraction)

NOTE: Units marked * have prerequisites. See individual unit for details.

Within the requirements for the awarding of a Certificate III in Process Plant Operations choose at least 2 of:

Unit code	Unit title	
PMAOPS312A	Undertake ship loading/unloading operations	*
PMAOPS320A	Conduct artificial lift	
PMAOPS321A	Undertake well management	*
PMAOPS325A	Generate electrical power	*
PMAOPS326A	Produce product using gas absorption	
PMAOPS327A	Produce product using fixed bed dehydration	
PMAOPS329A	Produce product using liquid extraction	

Certificate II in Process Plant Operations PMA20102 (Hydrocarbons Transmission)

NOTE: Units marked * have prerequisites. See individual unit for details.

Within the requirements for the awarding of a Certificate II in Process Plant Operations choose at least 3 of:

Unit code	Unit title	
PMAOPS221A	Operate and monitor prime movers	
PMAOPS222A	Operate and monitor pumping systems and equipment	
PMAOPS223A	Operate and monitor valve systems	
PMAOPS230A	Operate, monitor and maintain pipeline facilities and equipment	
PMAOPS231A	Control gas odourisation	*

Certificate III in Process Plant Operations PMA30102 (Hydrocarbons Transmission)

Within the requirements for the awarding of a Certificate III in Process Plant Operations choose the following:

Unit code	Unit title
PMAOPS329A	Produce product using liquid extraction
PMAOPS330A	Communicate pipeline control centre operations

Customising advice

Customising may be done by:

- **choosing** from the units provided in this Training Package to suit the particular situation (see section 2)
- **specifying** particular combinations of units provided in this Training Package to suit the combination of skills required in the workplace
- **customising** the units provided in this Training Package according to the customising rules to better suit a particular situation (see below)
- **importing** suitable units from another set of endorsed competency standards and replacing some of the 'support' units in this Training Package. This substitution is limited by the rules below.

Note that substitution of 'core' or 'operations' units is not permitted.

We welcome and encourage the export of these units to other Training Packages provided the rules below are observed.

Specifying combinations of units

Individual competency units in this Training Package will specify prerequisite and co-requisite competencies which may be required. Individual enterprises may find it appropriate to specify additional prerequisite and/or co-requisite competencies because of the requirements of their particular process.

This is permitted, and will change the way in which the units are packaged for the qualification, but in no way increases or decreases the total number of units required for the awarding of a qualification, and must still comply with the overall requirements of section 2.

An example of where this may be desirable is a company which both mixes and carries out chemical reactions in the one vessel. The company may wish to specify as co-requisite units:

- PMAOPS202A Operate fluid mixing equipment
- PMAOPS302A Operate reactors and reaction equipment.

Customising of competency units

Customising rules

Competency **units** may be customised. Customisation which:

- replaces general directions with enterprise specific needs
- replaces generic equipment/process names with enterprise specific names

- replaces general processes/specifications with enterprise specific needs

is allowed and encouraged, provided the customised unit is of similar level and rigour to the original competency unit.

Note that customising cannot be used to generate an additional competency which is closely related to an existing competency. Customisation can only be used to generate an alternative competency for qualifications purposes.

Customisation may only be done if it does not significantly change the level and rigour or change the range of applicability of the unit. Customisation may be done within the range of variables and the evidence guide. Note also that customisation of the elements or performance criteria is not permitted. As a minimum, the customised unit should:

- be of similar level and rigour
- be of a similar breadth, complexity and size
- be relevant to the industry and the enterprise
- not reduce the health, safety or environmental requirements
- retain the original Unit code number.

Customising 'operations' units

Operations units may not be substituted with other units.

Operations units may be customised within the bounds specified above in this section.

Two operations units:

- PMAOPS200AOperate an item of equipment
- PMAOPS300AOperate a production unit

are intended to be used primarily in a customised form. These two units apply to situations where no other OPS unit in the Training Package is deemed to be appropriate. OPS 200 and OPS 300 should be customised to suit individual situations, within the general customising rules of this section. Note that customising cannot be used to generate an additional competency which is closely related to an existing competency. Customisation can only be used to generate an alternative competency for qualification purposes.

New units

Where there is no suitable equivalent unit of competency in any national competency standards that can be used or customised to the enterprise's requirements new units may be developed and submitted to DEST via

Manufacturing Learning Australia for endorsement and inclusion in the Training Package. MLA will treat the proposed new unit as a 'Category 2' change under the DEST continuous improvement guidelines. All units of competency within Training Packages must be endorsed by the National Training Quality Committee and listed on the National Training Information Service.

Importing competencies from other Training Packages

Competency units may be **imported** from another set of endorsed competency standards to customise a **qualification**. These imported units may be used to replace the maximum number of 'support' units only. The use of imported units is allowed if:

- they are from a set of endorsed competency standards (the original Unit code number must be retained)
- they are appropriate to the needs of the enterprise
- they correspond to an equivalent AQF level qualification
- any prerequisites and co-requisites specified in the original set of competency standards are also observed.

AND provided no more replacement units are used than the allowable number of support units. Core and operation units may not be substituted (however, see *Customising 'operations' units* above).

The following are examples of acceptable and unacceptable substitutions.

- Kim wishes to incorporate the unit 'Operational maintenance of machines/equipment' (from the National Metal and Engineering standards) into Certificate II instead of one of the **support** units. This is an acceptable substitution. Note that this unit has a prerequisite of 'Use hand tools' which must also be met, and so this actually counts as a substitution of TWO units.
- Pat wishes to substitute the unit 'Participate in stocktakes' (from the Transport and Distribution standards) instead of one of the **operations** units. It is NOT acceptable to substitute **operations** units. However, if Pat were to substitute for a support unit, rather than an operations unit, it would be acceptable.
- Leslie wishes to substitute 'Operational maintenance of machines/equipment', 'Participate in stocktakes', 'Draw and interpret sketch' and 'Use hand tools' (both from National Metal and Engineering) and 'Replenish stock' (from Transport and Distribution) for five **support** units in the Certificate I. This is NOT acceptable as there is only one support unit in Certificate I. It should also be noted that it is NOT advisable to substitute units at AQF 2 into Certificate I.

Exporting competencies to other Training Packages

Manufacturing Learning Australia encourages other industries and ITABs to access the units of competency in this Training Package which might be appropriate to their needs. These competencies may be used provided:

- the original Unit code number is retained
- they are only customised to the extent permitted above
- any specified prerequisites and co-requisites are observed
- Manufacturing Learning Australia is advised of the specific competencies to be used to facilitate ongoing communication in the event of an update.

Other suggested imported units

A range of imported units of competency has been listed in the tables included in section 2, *Packaging advice*. These units are reproduced in full in the competency standards forming part of this Training Package.

Relevant units of competency may be imported from any endorsed set of competency standards (see section 4, *Customising advice,* for details). This is necessary to meet the range of possible requirements from this very diverse industry. The table below lists some of the units of competency which might be more commonly imported. Details may be accessed from the relevant national ITAB or from the NTIS (http://www.ntis.gov.au/). This list is included as an aid to finding relevant units to import and in no way restricts the possible range of imported units.

These units would be imported as 'support' units and may be used to contribute to the requirements of a qualification under this Training Package.

This list may also be used as a preliminary evaluation of the relevance of a new entrant holding a qualification from these areas.

Laboratory Operations Training Package PML 99

PMLDATA300A	Process and record data
PMLMAIN300A	Maintain the laboratory fit for purpose
PMLSAMP300A	Handle and transport samples
PMLTEST302A	Calibrate test equipment and assist with its maintenance
PMLSAMP400A	Obtain representative samples in accordance with a sampling plan
PMLTEST400A	Perform instrumental tests/procedures
PMLDATA500A	Analyse data and report results
PMLTEST500A	Calibrate and maintain instruments

Metal and Engineering Training Package MEM 98

MEM2.14C5A	Use graphical techniques and perform simple statistical computations
MEM3.1A	Manual production assembly
MEM3.2A	Precision assembly
MEM10.6A*	Install machine/plant
MEM10.8B	Undertake commissioning procedures for plant and/or equipment
MEM11.1A	Erect/dismantle scaffolding and equipment
MEM11.4A	Undertake dogging/crane chasing
MEM11.10A	Operate load shifting equipment
MEM11.22A	Operate fixed/movable load shifting equipment
MEM15.8B A	Perform advanced statistical quality control

* Units which can only be used in qualifications at Certificate III and above.

Frontline Management

BSBFLM302A	Support leadership in the workplace
BSBFLM303A	Contribute to effective workplace relationships
BSBFLM304A	Participate in work teams
BSBFLM305A	Support operational plan
BSBFLM306A	Provide workplace information and resourcing plans
BSBFLM309A	Support continuous improvement systems and processes
BSBFLM311A	Support a workplace learning environment
BSBFLM402A	Show leadership in the workplace
BSBFLM403A	Manage effective workplace relationships
BSBFLM404A	Lead work teams
BSBFLM405A	Implement operational plan
BSBFLM406A	Implement workplace information system
BSBFLM409A	Implement continuous improvement
BSBFLM501A	Manage personal work priorities and professional development
BSBFLM502A	Provide leadership in the workplace
BSBFLM503A	Establish effective workplace relationships
BSBFLM504A	Facilitate work teams
BSBFLM505A	Manage operational plan
BSBFLM506A	Manage workplace information systems
BSBFLM507A	Manage quality customer service
BSBFLM509A	Promote continuous improvement
BSBFLM510A	Facilitate and capitalise on change and innovation
BSBFLM511A	Develop a workplace learning environment

Transport and distribution

TDTA1297A	Pick and process orders
TDTA1697A	Use inventory systems to organise stock control
TDTA2297A	Participate in stocktakes

Textiles, clothing and footwear

LMTQAGN02A	Coordinate external quality assurance
LMTQAGN03A	Manage quality system and procedures
LMTMTGN01A	Prepare procedures and specifications
LMTMTGN02A	Develop and implement policies and procedures

National Public Services

PSPPROC401A	Plan procurement
PSPMNGT601A	Facilitate workforce effectiveness
PSPMNGT602A	Manage resources
PSPMNGT603A	Facilitate people management
PSPMNGT604A	Manage change
PSPMNGT605A	Manage diversity
PSPMNGT606A	Manage the delivery of quality client service
PSPMNGT607A	Develop a business case
PSPMNGT608A	Manage risk
PSPMNGT609A	Formulate business strategies
PSPMNGT701A	Provide strategic direction

PSPPM401A	Develop a project
PSPPM402A	Implement projects
PSPPM403A	Close projects
PSPPM501A	Initiate projects
PSPPM503A	Finalise projects
PSPPM601A	Direct project activities
PSPPROC402A	Request and receive offers
PSPPROC403A	Award contracts
PSPPROC404A	Manage contracts

First Aid Guideline Competency Standards

Guideline units of competency in first aid have been developed and noted by DEST. They are:

1 Perform initial first aid
2 Provide and manage first aid and support
3 Prepare and maintain first aid records and resources
4 Manage first aid systems.

Innovation Competency Standards

Units of competency in innovation have been developed and noted by DEST. They are:
ICS1 Contribute to workplace improvements
ICS2 Share ideas in a workplace
ICS3 Develop innovative ideas at work
ICS4 Originate and develop a concept
ICS5 Create an innovative work environment
ICS6 Create an innovative work environment
ICS7 Set up systems that support innovation.

Assessment Guidelines

for the

PMA02 Chemical, Hydrocarbons and Oil Refining Training Package

Contents

Introduction

These assessment guidelines provide the endorsed framework for assessment of the units of competency in this Training Package.

They are designed to ensure that assessment activities are consistent with the *Australian Quality Training Framework Standards for Registered Training Organisations* and that the assessment processes and outcomes are valid, reliable, flexible and fair.

Assessments against the competency standards in this Training Package *must* be carried out in accordance with these endorsed guidelines.

The assessment guidelines comprise six sections:

- assessment system overview
- assessor requirements
- designing assessment resources
- conducting assessment
- assessment in the chemical, hydrocarbons and oil refining industry
- further sources.

Assessment system overview

Benchmarks for assessment

The competency standards in this Training Package are benchmarks for assessment and are the basis of the nationally recognised Australian Qualifications Framework (AQF), qualifications, and statements of attainment issued by Registered Training Organisations (RTOs).

Assessment within the National Training Framework is defined as the process of **collecting evidence** and **making judgements** about whether competency has been achieved. The purpose of assessment is to confirm whether an individual **can perform to the standards** expected in the workplace, as expressed in the **competency standards** in the Training Package.

When conducting assessments, assessors must ensure that they are familiar with the full text of the unit(s) of competency being assessed. In particular, they must ensure that the assessment arrangements:

- cover all elements of the unit of competency being assessed;
- address the four dimensions of competency: task skills, task management skills, contingency management skills and job/role environment skills;
- are consistent with the evidence guide for each relevant unit of competency, as this specifies the context of assessment, the critical aspects of competency, the required underpinning knowledge and skills, and the identification of key competencies and their performance level. In some cases there will be reference to having access to real workplace conditions and infrastructure.

Australian Quality Training Framework assessment requirements for RTOs

Assessment for national recognition purposes must meet the requirements of the Australian Quality Training Framework (AQTF). Assessment must be conducted by an RTO formally registered under *Australian Quality Training Framework Standards for Registered Training Organisations* with the specific competency standards or Training Package within its scope of registration. The RTO must meet the requirements of the relevant assessment standards in the *Australian Quality Training Framework Standards for Registered Training Organisations* as set out below.

The RTO's assessments for national recognition, regardless of whether this is through a training and assessment pathway or an assessment-only pathway, must:

- comply with the assessment guidelines included in nationally endorsed Training Packages;

- lead to the issuing of a statement of attainment or qualification under the AQF when a person is assessed as competent against nationally endorsed unit(s) of competency

- be underpinned by an assessment process that complies with the principles of validity, reliability, fairness and flexibility

- provide for applicants to be informed of the context and purpose of the assessment and the assessment process

- focus on the application of knowledge and skill to the standard of performance required in the workplace and cover all aspects of workplace performance, including task skills, task management skills, contingency management skills and job/role environment skills

- involve the evaluation of sufficient evidence[10] to enable professional judgements to be made about whether competency has been attained

- provide for feedback to the applicant about the outcomes of the assessment process and guidance on future options

- provide for reassessment on appeal, and

- be equitable for all groups or persons, taking account of cultural and linguistic needs.

Reasonable adjustments are to be made to ensure equity in assessment for people with disabilities. This means that wherever possible, 'reasonable' adjustments are to be made to meet the individual needs of a person with a disability. Adjustments are considered 'reasonable' if they do not impose an unjustifiable hardship on a training provider or employer. When assessing people with disabilities, assessors are encouraged to apply good practice assessment methods with sensitivity and flexibility.

The RTO's recognition of prior learning (RPL) process must be accessible to all applicants upon enrolment and must:

- be structured to minimise the time and cost to applicants

- provide adequate information and support to enable applicants to gather reliable evidence to support their claim for recognition of competencies currently held, regardless of how, when or where the learning occurred.

The RTO must ensure that, in developing, adapting or delivering training and assessment products and services:

- methods used to identify learning needs, and methods for designing training and assessment materials are documented

[10] See section 5 for further guidance on this point.

- language, literacy and numeracy requirements are consistent with the essential requirements for workplace performance specified in the relevant units of competency and that they develop the learning capacity of the individual

- the requirements of the Training Package are met

- core and elective units, as appropriate, are identified, and

- customisation meets the requirements specified in the Training Package.

The RTO must document its plans for delivery and assessment of each Training Package qualification and accredited course within the its scope of registration. These plans must ensure that:

- the delivery modes and training materials meet the needs of a diverse range of clients

- assessment plans, including proposed validation processes, are developed in consultation with enterprises/industry, and that they are documented at the point of registration and on application for extension of scope

- where assessment or training is conducted in the workplace, the RTO negotiates the delivery and assessment plan with the employer and learners, works with the employer to integrate on-the-job and off-the-job training and assessment, and schedules workplace visits to monitor/review the training and assessment

- where a New Apprenticeship training contract is in place or being negotiated, individual training plans encompassing both off-the-job training and structured on-the-job training are developed, documented, implemented and monitored for each apprentice or trainee.

The RTO must validate its assessment plans by:

- reviewing, comparing and evaluating the assessment processes, tools and evidence contributing to judgements made by a range of assessors against the same standards[11], at least annually, and

- documenting any action taken to improve the quality and consistency of assessment.

The RTO must have access to the staff, facilities, equipment, training and assessment materials necessary to provide the training and/or assessment within its scope of registration, and to accommodate client numbers and client needs (including off-campus and on-line delivery and assessment requirements).

[11] These may be internal processes with stakeholder involvement or external validations with other providers and/or stakeholders.

RTOs may operate in partnership with other organisations (see below) but, in doing this, are still responsible for the quality of their services and service outcomes.

In order to deliver and/or assess units of competency or qualifications and issue nationally recognised qualifications under the AQF, RTOs must have those units of competency and/or qualifications within their scope of registration.

Mutual recognition

Under the *Australian Quality Training Framework Standards for Registered Training Organisations*, every RTO must recognise and accept statements of attainment and qualifications issued by any other RTO.

Partnership arrangements

Under the ATQF, RTOs may enter into partnerships with non-registered organisations, such as schools, industry organisations and enterprises, for delivery and assessment within the RTO's scope of registration.

Where this is done, the RTO must have a formal agreement with the organisation that provides the training and/or assessment under its name. The agreement must specify how all parties will discharge their responsibilities for ensuring the quality of the training and/or assessment conducted on its behalf, including the qualification requirements for delivery and assessment.

The RTO has full responsibility for the quality and outcomes of any training or assessment conducted on its behalf, and it must maintain a register of all such agreements.

Recording assessment outcomes

The RTO that issues the AQF qualification or statement of attainment is responsible for recording, storing, retrieval and accessibility of the assessment outcomes specified in *Australian Quality Training Framework Standards for Registered Training Organisations*.

Reporting assessment outcomes

Statements of attainment and qualifications issued under the AQF must comply with the relevant provisions in the current *Australian Qualifications Framework Implementation Handbook*.

AQF qualifications must be issued once the full requirements for a qualification, as specified in the qualifications framework of the Training Package, have been met. A statement of attainment is to be issued where the individual achieves a qualification or is assessed as competent against fewer units of competency than are required for a qualification and the individual has completed their study or assessment process. Qualifications and statements of attainment issued must comply with the format specified in the current *AQF Implementation Handbook*.

Quality assurance mechanisms

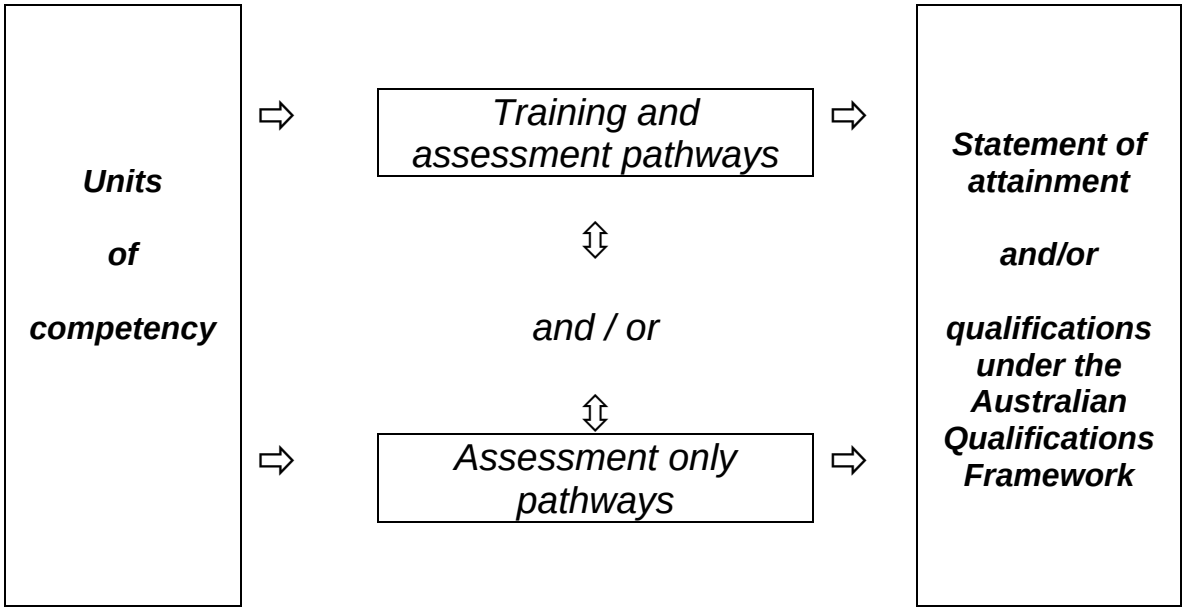
Under the provisions of the AQTF, RTOs involved in the assessment of the units of competency and qualifications within this Training Package are required to establish and use quality assurance mechanisms in line with their registration requirements.

It is *recommended* that RTOs include the following procedures within a quality assurance framework:

- establishment of a standard procedure for the selection of assessors
- conduct of regular professional development for assessors
- ongoing recording, monitoring and review of the assessment process, including the assessment plan, assessment outcomes and participant feedback
- development of a comprehensive bank of resources for participants and assessors including:
  - information about the assessment process
  - assessment instruments, where appropriate
  - standardised reporting and recording forms for participants, assessors, trainers and employers
  - guidelines for assessors on the preparation of the assessment plan, and conduct and review of the assessment process.

Assessment pathways

This Training Package incorporates a number of assessment pathways that lead to the recognition of competencies and the issuing of a qualification or statement of attainment. These pathways are illustrated in the following diagram.



As indicated above, assessment under this Training Package leading to an AQF qualification or statement of attainment may follow a training and assessment pathway, an assessment only pathway, or a combination of the two. All assessments, by any pathway, *must* comply with the AQTF assessment requirements for RTOs (see above). Each of these assessment pathways leads to full recognition under the AQF — the critical concern is that the candidate is competent, not how the competency was acquired. Each of the above pathways is detailed below.

Training and assessment pathway

For most candidates assessment and training are integrated, with assessment evidence being collected progressively and feedback being provided to the candidate. The candidate may undertake a structured program of training and assessment while on the job, while off the job, or in a combination of on-the-job and off-the-job environments.

This pathway is particularly suited to New Apprenticeships, as trainees can be provided with a mix of formal training, structured workplace experience and formative assessment activities. Through this combination of training and assessment the candidate can acquire and demonstrate the practical skills and knowledge identified in the relevant competency standards.

Assessment only pathway

In some circumstances an assessment only (skills recognition) pathway will be warranted. The candidate provides current, quality evidence against the relevant units of competency, and the outcomes of the assessment process indicate that the candidate is competent and that structured training is not required.

This pathway can operate in both on-the-job and off-the-job environments. It is likely to be most appropriate for students enrolling for qualifications who want recognition for prior learning or current competencies, for existing workers, for

individuals with overseas qualifications, for recent migrants with established work histories, for people returning to the workplace, and for people with disabilities or injuries requiring a change in career.

Candidates wishing to take this pathway present evidence that they possess the skills and knowledge identified in the relevant competency standards, and then an assessor judges whether the candidate is competent. Summative approaches to assessment may be directed by the candidate (such as in the compilation of portfolios), or by the assessor (such as observation of workplace performance, requiring demonstrations of skills, and carrying out oral and written testing).

Combination of 'training and assessment' and 'assessment only' pathways

Where candidates have gained competencies through work and life experience and gaps in their competency are identified, or where they require training in new areas, a combination of approaches may be appropriate.

In such situations, the candidate may undertake an initial assessment to determine their current competence using an 'assessment only pathway'. Once current competence is identified, a structured training and assessment program may be established to ensure that the candidate acquires the required additional competencies. These would be achieved through a 'training and assessment pathway'.

It is important to note that each of these assessment pathways leads to full recognition under the Australian qualifications framework. An individual's access to the assessment process should not be adversely affected by restrictions placed on the location or context of assessment beyond the requirements specified in this Training Package.

Recognition of prior learning and current competency

The competencies in this Training Package may be attained in a number of ways:

- formal or informal training and education
- work experience
- general life experience, and/or
- any combination of the above.

All assessment pathways must provide for the recognition of competencies previously attained. Competencies achieved and currently held by individuals can be formally assessed against the units of competency and qualifications in this Training Package, and should be recognised regardless of how, when or where they were achieved.

In assessing the competency of individual candidates, assessors must ensure that assessment processes take into account the skills and knowledge that candidates

already possess. This can be done by conducting a pre-assessment where the candidate provides evidence of prior learning. In order for prior learning to be recognised, the assessor must be confident that the evidence indicates that the candidate is currently competent against the endorsed industry or enterprise competency standards. This evidence may take a variety of forms and might include certification, references from past employers, testimonials from clients and work samples.

The onus is on candidates to provide sufficient evidence to satisfy assessors that they currently hold the relevant competencies. In determining whether a candidate has presented sufficient evidence, the assessor must ensure that the evidence of prior learning is:

- authentic (the candidate's own work)
- valid (directly related to the current version of the relevant endorsed competency standards)
- reliable (shows that the candidate consistently meets the competency standards)
- current (reflects the candidate's current capacity to perform the aspect of the work covered by the standards)
- sufficient (covers the full range of elements in the relevant unit of competency and addresses the four dimensions of competency, namely task skills, task management skills, contingency management skills and job/role environment skills).

Review and maintenance of the assessment system

Manufacturing Learning Australia is responsible for the ongoing monitoring and review of these assessment guidelines. This process will be incorporated in the general review and maintenance of this Training Package. Any review will ensure that these assessment guidelines:

- continue to meet the requirements of the industry
- are consistent with the Australian Quality Training Framework Standards for Registered Training Organisation**s**
- promote confidence in the system and the assessment outcomes on the part of industry, employers, enterprises, unions, employees, trainees, assessors and trainers
- ensure assessment processes and outcomes are valid, reliable, fair and flexible
- support RTOs in effectively carrying out their responsibilities.

Assessor requirements

The guidelines identify the mandatory minimum qualifications for those conducting assessments. They also clarify how more than one person may contribute to the assessment process where not all the required competencies are held by one person.

Assessor qualifications

There are *mandatory* requirements that must be met by individual assessors or collectively by the members of an assessment team or panel conducting assessments against this Training Package. Assessors ***must*** have the following assessment units of competency from BSB01 Business Services Training Package, or must have demonstrated equivalent competencies:

- BSZ401A Plan assessment
- BSZ402A Conduct assessment
- BSZ403A Review assessment

and the relevant vocational competencies, at least to the level being assessed.

In addition to the above, it is *recommended* that assessors have comprehensive current knowledge of the industry and the job or role against which performance is being assessed. They should also have appropriate interpersonal and communication skills and knowledge of language, literacy and numeracy issues in the context of assessment. These skills, knowledge and attributes may be developed and demonstrated through:

- participation in professional development
- relevant work experience
- participation in professional/industry networks
- recent planning and review of assessment activities
- participation in assessment validation processes
- recent assessment and/or workplace training activities.

All assessors who are engaged in assessing against this Training Package must be:

- employed by an RTO, or
- acting under the registration of an RTO (for example, an assessor working in an enterprise that has a partnership arrangement with the RTO).

This Training Package provides a range of options for meeting these assessor requirements. Assessments can be undertaken in a variety of workplace and institutional contexts by individual assessors, partnerships involving assessors and technical experts, and teams of assessors.

The options listed below show how the requirement to use qualified assessors can be met.

OPTIONS	**ASSESSORS, TECHNICAL EXPERTS AND WORKPLACE SUPERVISORS** (includes mandated requirements and recommended attributes)
Single assessor An individual **assessor** conducts the assessment	An **assessor** is required to: • hold formal recognition of competence in the relevant (assessment) units in BSB01 Business Services Training Package • be deemed competent and, where possible, hold formal recognition of competence in the specific units of competency in this Training Package, at least to the level being assessed. • In addition, it is recommended that the assessor is able to: • demonstrate current knowledge of the industry, industry practices, and the job or role against which performance is being assessed • demonstrate current knowledge and skill in assessing against this Training Package in a range of contexts • demonstrate the necessary interpersonal and communication skills required in the assessment process.
Partnership arrangement 1. An **assessor** works with a **technical expert** to conduct the assessment	An **Assessor** is **required** to hold formal recognition of competence in the relevant (assessment) units in BSB01 Business Services Training Package. In addition, it is **recommended** that the assessor is able to: • demonstrate current knowledge and skill in assessing against this Training Package in a range of contexts; • demonstrate the interpersonal and communication skills required in the assessment process. A **technical expert** is required to be deemed competent and, where possible, hold formal recognition of competence in the specific units of competency from this Training Package, at least to the level being assessed. In addition, it is **recommended** that the technical expert is able to: • demonstrate current knowledge of the industry, industry practices, and the job or role against which performance is being assessed • communicate and liaise with the assessor throughout the assessment process.

Partnership arrangement *2.* An **assessor** works with **workplace supervisor** in collecting evidence for valid assessment	An **assessor** is required to: • hold formal recognition of relevant (assessment) units in BSB01 Business Services Training Package • make the assessment decision. • In addition, it is recommended that the assessor is able to: • demonstrate current knowledge and skill in assessing against this Training Package in a range of contexts • demonstrate the interpersonal and communication skills required in the assessment process • communicate and liaise, where appropriate, with the workplace supervisor throughout the assessment process. A **workplace supervisor** is required to be deemed competent and, where possible, is to hold formal recognition of competence in the specific units of competency from this Training Package, at least to the level being assessed. In addition, it is **recommended** that the workplace supervisor is able to: • demonstrate current knowledge of the industry, industry practices, and the job or role against which performance is being assessed • communicate and liaise, where appropriate, with the assessor throughout the assessment process • use agreed practices to gather and record evidence for the assessor to use in making a valid judgement on competency.
Assessment team/panel A team working together to conduct the assessment	Members of an **assessment team or panel** that comprises assessment and industry experience and expertise works together in the collection of evidence and in making judgements about competency. The members of the team **must** include at least one person who: • holds formal recognition of relevant (assessment) units in BSB01 Business Services Training Package • is deemed competent and, where possible, holds formal recognition of competence in the specific units of competency from this Training Package, at least to the level being assessed. In addition, it is **recommended** that members of the team/panel involved in the assessment are able to: • demonstrate current knowledge of the industry, industry practices, and the job or role against which performance is being assessed • demonstrate current knowledge and skill in assessing against this Training Package in a range of contexts • demonstrate the interpersonal and communication skills required in the assessment process and liaise with other team/panel members throughout the assessment process.

Designing assessment resources

Assessment resources provide a means of collecting the evidence that assessors use in making judgements about whether candidates have achieved competency. In some cases, assessors may use prepared assessment materials, such as those specifically developed to support this Training Package. Alternatively they may develop their own assessment materials to meet the needs of their clients.

If using prepared assessment materials, assessors should ensure that the materials are benchmarked, or mapped, against the current version of the relevant unit of competency. This can be done by checking that the materials are listed on the National Training Information Service (http://www.ntis.gov.au). Materials on the list have been noted by the National Training Quality Council as meeting their quality criteria for Training Package support materials.

When developing their own assessment materials, assessors must ensure that:

- the materials are benchmarked against the selected unit(s) of competency in this Training Package
- the materials are validated to ensure that assessors can gather sufficient valid and reliable information to make assessment decisions against the competency standards
- the materials and processes meet the AQTF assessment requirements for RTOs in section 1 of this document.

Key references for assessors engaged in developing assessment materials is the *Training Package for Assessment and Workplace Training* [BSZ98] and *Develop Assessment Tools* [BSZ507A]. There is no set format or process for the design, production or development of assessment materials.

Conducting assessments

The following chart describes the industry-preferred process for conducting assessments against the competency standards in this Training Package. This process applies to all assessments conducted for the purposes of national recognition in both institutional and workplace contexts.

Step 1

Establish the assessment context

The assessor:

- establishes the context and purpose of the assessment
- identifies the relevant competency standards, assessment guidelines and qualification framework in this Training Package
- identifies any NTQC noted support materials that have been developed to facilitate the assessment process
- analyses the competency standards and identifies the evidence requirements
- identifies potential evidence collection methods.

Step 2

Prepare the candidate

The assessor meets with the candidate to:

- explain the context and purpose of the assessment and the assessment process
- explain the competency standards to be assessed and the evidence to be collected
- advise on self-assessment, including processes and criteria
- outline the assessment procedure, the preparation the candidate should undertake, and answer any questions
- assess the needs of the candidate and, where applicable, negotiate reasonable adjustment for assessing people with disabilities without compromising the integrity of the competencies
- seek feedback regarding the candidate's understanding of the competency standards, evidence requirements and assessment process
- determine if the candidate is ready for assessment and, in consultation with the candidate, decide on the time and place of the assessment
- develop an assessment plan.

Step 3 **Plan and prepare the evidence gathering process**	The assessor must: • establish a plan for gathering sufficient quality evidence about the candidate's performance in order to make the assessment decision (and involve industry representatives in the development of plans for the validation of assessment) • source or develop assessment materials to assist in the evidence gathering process • organise equipment or resources required to support the evidence gathering process • coordinate and brief other personnel involved in the evidence gathering process.
Step 4 **Collect the evidence and make the assessment decision**	The assessor must: • establish and oversee the evidence gathering process to ensure its validity, reliability, fairness and flexibility • collect appropriate evidence and assess this against the elements, performance criteria, range statement and evidence guide in the relevant units of competency • evaluate evidence in terms of the four dimensions of competency — task skills, task management skills, contingency management skills, and job/role environment skills • incorporate allowable adjustments to the assessment procedure without compromising the integrity of the competencies • evaluate the evidence in terms of validity, consistency, currency, equity, authenticity and sufficiency • consult and work with other staff, assessment panel members or technical experts involved in the assessment process • record details of evidence collected • make a judgement about the candidate's competency based on the evidence and the relevant unit(s) of competency.
Step 5 **Provide feedback on the assessment**	The assessor must provide advice to the candidate about the outcomes of the assessment process. This includes providing the candidate with: • clear and constructive feedback on the assessment decision • information on ways of overcoming any identified gaps in competency revealed by the assessment • the opportunity to discuss the assessment process and outcome • information on reassessment and the appeals

process.

Step 6 **Record and report the result**	The assessor must: • record the assessment outcome according to the policies and procedures of the RTO • maintain records of the assessment procedure, evidence collected and the outcome according to the policies and procedures of the RTO • maintain the confidentiality of the assessment outcome • organise the issuing of qualifications and/or statements of attainment according to the policies and procedures of the RTO.
Step 7 **Review the assessment process**	On completion of the assessment process, the assessor must: • review the assessment process • report on the positive and negative features of the assessment to those responsible for the assessment procedures • if necessary, suggest to appropriate personnel in the RTO ways of improving the assessment procedures.
Step 8 **Participate in the reassessment and appeals process**	The assessor must: • provide feedback and counsel the candidate, if required, regarding the assessment outcome or process, including guidance on further options • provide the candidate with information on the reassessment and appeals process • report any disputed assessment decision to the appropriate personnel in the RTO • participate in the reassessment or appeal according to the policies and procedures of the RTO.

Assessment in the chemical, hydrocarbons and oil refining industry

General issues

Assessment of competency will be in accordance with the relevant legislation applying in each state and territory. This will include:

- occupational health and safety Acts and regulations
- environmental protection acts and regulations.

In certain circumstances other legislation/regulation will also be relevant including:

- major hazard facility regulations
- poisons Acts and regulations
- dangerous goods regulations.

Wherever possible integrated assessment, which reflects the grouping of competencies as they would be demonstrated in an actual work role, is the preferred means of assessment. The context of the assessment is defined in each unit of competency.

Where units of competency have been imported from another Training Package (ie the unit code does NOT have the 'PMA' prefix), the Registered Training Organisation responsible for the assessment should check the assessment guidelines covering those units of competency in their source Training Package.

Evidence gathering methods must be equitable to all groups of participants. Assessment procedures should also be culturally appropriate for the individual and the situation. Reasonable adjustments should be made to assessment procedures for people with special needs such as people with disabilities or with language or literacy difficulties. The language and literacy requirements of the assessment process should not exceed the language and literacy requirements of the particular level of work in the industry.

Assessment considerations for 'OPS' units

All units have been written with a focus on a workplace assessment environment. Where this is obligatory it is identified in the unit of competency.

Competence must be demonstrated in the ability to recognise and analyse potential situations requiring action and then in implementing appropriate corrective action. The emphasis should be on the ability to stay out of trouble rather than on recovery from a disaster.

The performance of OPS units relies on compliance with all the requirements of the organisation's quality management system. Where such systems are mandated by legislation or licensing then the context in which the competence is demonstrated/assessed must meet the requirements of that legislation or license to the satisfaction of the regulatory authority.

Consistent performance should be demonstrated. In particular look to see that:

- early warning signs of equipment/processes needing attention or with potential problems are recognised
- the range of possible causes can be identified and analysed and the most likely cause determined
- appropriate action is taken to ensure a timely return to full performance
- obvious problems in related plant areas are recognised and an appropriate contribution made to their solution.

These aspects may be best assessed using a range of scenarios/case studies/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, unusual and improbable 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.

Assessment design considerations

Most units of competency in the PMA02 Training Package, particularly the 'OPS' units, have three main components:

- a set of essential knowledge which is required for the competent performance of the skills which comprise the unit of competency and which is listed in the unit of competency both as part of the performance criteria and also in the evidence guide
- a set of routine skills which will be typically performed on a regular basis on the job and which are the basis of the elements and performance criteria
- a set of non-routine skills which are vital to the safe and efficient operation of the plant/process over the medium to long term and which are included in the elements and performance criteria but which may not be performed on a regular basis.

The assessment design needs to incorporate features which will ensure adequate evidence is gathered for each of these components.

Essential knowledge

It will be difficult, and often impossible, to gather sufficient evidence of the required essential knowledge by means of direct observation alone. It will be

necessary to include some form of questioning, which may, or may not, be concurrent with direct observation. Questioning should not rely on written communication to any greater degree than is otherwise required by the unit of competency. The use of diagrams and sketching as well as 'show and tell' should be allowable within the assessment of essential knowledge.

Routine skills

Sufficient evidence of competent performance of routine skills may be obtained by direct observation. However, observation on more than one occasion is required as the observation needs to include performance of the skills under a range of all normal and some abnormal conditions. Thus other evidence gathering tools may be included to gather evidence of consistent performance under a range of conditions. The emphasis is on evidence of competent performance rather than on direct observation, and this may come from plant records and work colleagues.

Non-routine skills

By their nature the non-routine skills are unlikely to be able to be assessed adequately by direct observation. These skills include problem solving and emergency response and it would be inappropriate to set up a situation, or to wait for a situation to occur, which would allow for direct observation. Some appropriate form of simulation/role play/case study is most likely to be the best form of gathering sufficient, appropriate evidence of competence. Where the appropriate choice between these is restricted, this will be stated in the unit of competency. These approaches as defined as:

- *simulation* - a structured resource-based exercise which seeks to simulate real life situations and requires the assessee to achieve a specific task

- *role-play* - a person-centred simulation used to present assessees with the opportunity to display behavioural and interpersonal skills

- *case study* - an assessment tool which presents a simulated context and provides assessees with opportunities to display problem solving and decision making skills.

Generally, where:

- physical skills are significant (eg, emergency procedures), then a simulation is the preferred method (this may require coordination with a regular 'safety drill')

- interpersonal skills are significant, then role-play is the preferred method

- cognitive skills are significant (eg, problem solving) then case study is the preferred method.

Integrated assessment

Notwithstanding the above, it is the intention that the ability to perform the unit of competency as a whole be the key criterion in any assessment process.

Further, it is frequently appropriate to assess more than one unit of competency at the same time, either because the items of equipment combine to make a whole plant unit (eg, fluid flow equipment and heat exchangers) or because certain competencies are only practised in combination with other competencies (eg, working in a team with an appropriate 'OPS' unit). The assessment of more than one unit of competency concurrently is desirable, provided adequate evidence is gathered for each competency involved.

Further sources

The following list of resources and organisations is provided to assist assessors in planning, designing, conducting and reviewing of assessments against this Training Package.

General resources

The key resource **Training Package for Assessment and Workplace Training** is available from:

Business Services Training Australia
Telephone: (03) 9824 0866 Website: http://www.nawtb.com.au

Australian Training Products Ltd
Telephone: (03) 9655 0600 Website: http://www.atpl.net.au

Training Package Assessment Guides. A kit of ten booklets which provide guidance, sample materials, templates, case studies and practical tips covering a broad range of assessment strategies and issues. Available from Australian Training Products (see above).

Process Manufacturing Training Packages Guide: Make Training Work Kit. A kit of 9 booklets which provide detailed guidance, examples and templates to assist in unpacking a Training Package and increasing the efficiency of your training effort. Available from Australian Training Products (see above).

Specific assessment resources

Manufacturing Learning Australia assessment resources

MLA, 2001, *Assessing Competencies*, Make Training Work series

MLA, 2001, *Designing Assessment*, Make Training Work series

MLA, 2001, *Level Playing Fields*, Make Training Work series

MLA, 2001, *Partnerships*, Make Training Work series

MLA, 1999, *Integrated Assessment — Examples*, Manufactured Mineral Products series

Assessment instrument design

Hagar, P., Athanasou, J. and Gonczi, A., 1994, *Assessment Technical Manual*, Australian Government Publishing Service, Canberra

VETASSESS and Western Australian Department of Training and Employment, 2000, *Designing Tests — Guidelines for designing knowledge based tests for Training Packages*

Vocational Education and Assessment Centre, 1997, *Designing Workplace Assessment Tools, A self-directed learning program*, NSW TAFE

Manufacturing Learning Australia, 2000, *Assessment solutions*, Australian Training products, Melbourne

Assessor training

Green, M., Moritz, R., Moyle, K. and Vale, K., 1997, *Key competencies professional development Package*, Department for Education and Children's Services, South Australia

Australian Committee on Training Curriculum (ACTRAC), 1994, *Assessor training program — learning materials*, Australian Training products, Melbourne

Australian Training Products Ltd, *Assessment and Workplace Training, Training Package — Toolbox*

Victorian TAFE Association, 2000, *The professional development CD: A learning tool*, VTA, Melbourne

Australian National Training Authority, *A Guide for Professional* Development

Australian National Training Authority, Facilitator Packs for Certificate IV in Assessment and Workplace Training

Australian National Training Authority, *Facilitator's Pack for Train Small Groups and Assessment*

Australian National Training Authority, Facilitator's Pack for Certificate IV (BSZ405A — BSZ408A)

Australian National Training Authority, *Learners Packs for Certificate IV in Assessment and Workplace Training*

Australian National Training Authority, *Learner's Pack for Assessment (BSZ401A — BSZ403A)*

Australian National Training Authority, *Learner's Pack for Certificate IV (BSZ401A — BSZ408A)*

Australian National Training Authority, *Learner's Pack for Assessment with Assessment competency standards*

Australian National Training Authority, *Learner's Pack for Certificate IV with Certificate IV competency standards*

Obtainable from Australian Training Products and also Business Services Australia.

Conducting assessments

Bloch, B. and Thomson, P., 1994, *Working towards best practice in assessment: A case study approach to some issues concerning competency-based assessment in the vocational education and training sector*, NCVER, Adelaide

Docking, R., 1991, *An A–Z of assessment myths and assessment in the workplace*, Competence assessment briefing series, No. 4, Employment Department, Perth, Western Australia

Hawke, Geof, 1996, *Integrating assessment of learning outcomes*, Assessment Centre for Vocational Education, Sydney

Hawke, Geof, 1995, *Work-based learning: advice from literature*, Assessment Centre for Vocational Education, Sydney

National Assessors and Workplace Trainers Body, *Putting it into practice* [Training Package implementation Guide]

Parsloe, E., 1992, *Coaching, mentoring and assessing: A practical guide to developing competence*, Kogan Page, London

Rumsey, David, 1993, 'Practical issues in workplace assessment' in National Assessment Research Forum: *A forum for research into competency-based assessment* [VEETAC Competency Based Training Working party Assessment Steering Group], NSW TAFE Commission, Sydney

Rumsey, David, 1994, *Assessment practical guide*, Australian Government Publishing Service, Canberra

Evidence gathering methods

Australian National Training Authority, 1998, *A new assessment tool*, ANTA, Melbourne

Gonczi, A. (ed.), 1992, D*eveloping a competent workforce: adult learning strategies for vocational education and training*, TAFE National Centre for Research and Development, Adelaide

Kearney, Paul, 1992, *Collaborative assessment techniques*, Artemis, Tasmania

National Assessors and Workplace Trainers Body, *The evidence resource kit* — containing language, literacy and numeracy video and CD ROM

National Assessors and Workplace Trainers Body, *The evidence workbooks*

Assessment system design

National Centre for Vocational Education and Research, 1996, *Integrating assessment: removing the on the job/off the job gap*, Conference papers from 4-6 June, Western Australian Department of Training

OTFE, 1998, *Demonstrating best practice in VET project — assessment systems and processes*, Victoria

Toop, L., Gibb, J and Worsnop, P.., *Assessment system designs*, Australian Government Publishing Service, Canberra

Wilson, P., 1993, *Integrating workplace and training system assessments*, Testing Times Conference, NCVER, Sydney

Managing assessment systems

Western Australia Department of Training and VETASSESS, 1998, *Kit for Skills Recognition Organisations*, WADTE, Perth

Field, L., 1995, *Managing organisational learning*, Longman, Melbourne

Recognition of Current Competency/ Recognition of Prior Learning

Recognition and Assessment Centre, 1994, *New place: Same Skills. A guide for people from non-English speaking backgrounds*, Office of Multicultural Affairs, DEET

Recognition and Assessment Centre, *A Flexible Approach to Recognition Practices: RPL as a Framework*, Melbourne.

Obtainable from Recognition and Assessment Centre, PO Box 299, Somerton, Vic 3062, Telephone (03) 9254 3016.

Customisation Guidelines

for the

PMA02 Chemical, Hydrocarbons and Oil Refining Training Package

Contents

General advice

Customising may be done by:

- **choosing** from the units provided in this Training Package to suit the particular situation (see section 2)
- **specifying** particular combinations of units provided in this Training Package to suit the combination of skills required in the workplace
- **customising** the units provided in this Training Package according to the customising rules to better suit a particular situation (see below)
- **importing** suitable units from another set of endorsed competency standards and replacing some of the 'support' units in this Training Package. This substitution is limited by the rules below.

Note that substitution of 'core' or 'operations' units is not permitted.

We welcome and encourage the export of these units to other Training Packages provided the rules below are observed.

Specifying combinations of units

Individual competency units in this Training Package will specify prerequisite and co-requisite competencies which may be required. Individual enterprises may find it appropriate to specify additional prerequisite and/or co-requisite competencies because of the requirements of their particular process. This is permitted, and will change the way in which the units are packaged for the qualification, but in no way increases or decreases the total number of units required for the awarding of a qualification, and must still comply with the overall requirements of section 2.

An example of where this may be desirable is a company which both mixes and carries out chemical reactions in the one vessel. The company may wish to specify as co-requisite units:

- PMAOPS202A Operate fluid mixing equipment
- PMAOPS302A Operate reactors and reaction equipment.

Customising of competency units

Customising rules

Competency **units** may be customised. Customisation which:

- replaces general directions with enterprise specific needs

- replaces generic equipment/process names with enterprise specific names
- replaces general processes/specifications with enterprise specific needs

is allowed and encouraged, provided the customised unit is of similar level and rigour to the original competency unit.

Note that customising cannot be used to generate an additional competency which is closely related to an existing competency. Customisation can only be used to generate an alternative competency for qualifications purposes.

Customisation may only be done if it does not significantly change the level and rigour or change the range of applicability of the unit. Customisation may be done within the range of variables and the evidence guide. Note also that customisation of the elements or performance criteria is not permitted. As a minimum, the customised unit should:

- be of similar level and rigour
- be of a similar breadth, complexity and size
- be relevant to the industry and the enterprise
- not reduce the health, safety or environmental requirements
- retain the original Unit code number.

Customising 'operations' units

Operations units may not be substituted with other units.

Operations units may be customised within the bounds specified above in this section.

Two operations units:

- PMAOPS200A Operate an item of equipment
- PMAOPS300A Operate a production unit

are intended to be used primarily in a customised form. These two units apply to situations where no other OPS unit in the Training Package is deemed to be appropriate. OPS 200 and OPS 300 should be customised to suit individual situations, within the general customising rules of this section. Note that customising cannot be used to generate an additional competency which is closely related to an existing competency. Customisation can only be used to generate an alternative competency for qualification purposes.

New units

Where there is no suitable equivalent unit of competency in any national competency standards that can be used or customised to the enterprise's requirements new units may be developed and submitted to DEST via Manufacturing Learning Australia for endorsement and inclusion in the Training Package. MLA will treat the proposed new unit as a 'Category 2' change under the DEST continuous improvement guidelines. All units of competency within Training Packages must be endorsed by the National Training Quality Council and listed on the National Training Information Service.

Importing competencies from other Training Packages

Competency units may be **imported** from another set of endorsed competency standards to customise a **qualification**. These imported units may be used to replace the maximum number of 'support' units only. The use of imported units is allowed if:

- they are from a set of endorsed competency standards (the original Unit code number must be retained)
- they are appropriate to the needs of the enterprise
- they correspond to an equivalent AQF level qualification
- any prerequisites and co-requisites specified in the original set of competency standards are also observed.

AND provided no more replacement units are used than the allowable number of support units. Core and operation units may not be substituted (however, see *Customising operation units* above).

The following are examples of acceptable and unacceptable substitutions.

- Kim wishes to incorporate the unit 'Operational maintenance of machines/equipment' (from the National Metal and Engineering standards) into Certificate II instead of one of the **support** units. This is an acceptable substitution. Note that this unit has a prerequisite of 'Use hand tools' which must also be met, and so this actually counts as a substitution of TWO units.
- Pat wishes to substitute the unit 'Participate in stocktakes' (from the Transport and Distribution standards) instead of one of the **operations** units. It is NOT acceptable to substitute **operations** units. However, if Pat were to substitute for a support unit, rather than an operations unit, it would be acceptable.
- Leslie wishes to substitute 'Operational maintenance of machines/equipment', 'Participate in stocktakes', 'Draw and interpret sketch' and 'Use hand tools' (both from National Metal and Engineering) and 'Replenish stock' (from Transport and Distribution) for five support units in

the Certificate I. This is NOT acceptable as there is only one support unit in Certificate I. It should also be noted that it is NOT advisable to substitute units at AQF 2 into Certificate I.

Exporting competencies to other Training Packages

Manufacturing Learning Australia encourages other industries and ITABs to access the units of competency in this Training Package which might be appropriate to their needs. These competencies may be used provided:

- the original Unit code number is retained
- they are only customised to the extent permitted above
- any specified prerequisites and co-requisites are observed
- Manufacturing Learning Australia is advised of the specific competencies to be used to facilitate ongoing communication in the event of an update.

Core and Support Competencies (100 to 300)

for the

PMA02 Chemical, Hydrocarbons and Oil Refining Training Package

Contents

Competency Standards: Core and Support Competencies

Core competencies

Support competencies (including core)

Unit title

PMAOHS100C Follow OHS procedures

Unit descriptor

On completion of this unit, the worker will be able to accurately recognise hazards commonly occurring at the workplace and follow health and safety instructions and procedures in the workplace. These instructions and procedures relate to the work being undertaken by the worker. The worker will be aware of the importance of maintaining their health and safety and the health and safety of others in the workplace. The worker will also be capable of dealing with incidents and emergencies within the worker's scope of responsibility and under the direction of the supervisor.

Whilst the instructions and procedures must be derived from the relevant organisational OHS policies, the worker is not required to understand or interpret these policies.

Prerequisites

This unit **has no** prerequisites.

Element	Performance criteria
1. Recognise hazards.	1.1 Describe hazards commonly found in the workplace 1.2 Check work area routinely before and during work 1.3 Describe causes of such hazards.
2. Follow procedures for hazard control.	2.1 Follow procedures to remove or minimise hazards, within the scope of responsibilities and competencies 2.2 Use required personal protective and other safety equipment. 2.3 Identify the consequences of failing to follow these procedures and instructions.
3. Follow emergency procedures	3.1 Recognise emergency/emergency alarm 3.2 Go to muster point following procedure 3.3 Follow instructions related to the emergency
4. Report problems.	4.1 Report to appropriate people in accordance with workplace procedures when hazards arise.

Range of variables

Context

This unit of competency describes OHS requirements applicable for all workers whose work involves the use of workplace policies and procedures to maintain a safe work environment for themselves and others.

This competency covers process manufacturing plants which may involve workplace hazards such as:

- chemicals and hazardous materials
- gases and liquids under pressure
- moving machinery

- materials handling
- working at heights, in restricted or confined spaces, or environments subjected to heat, noise, dusts or vapours.

Routine checks of work area include:

- housekeeping checks such as obstructions on the floor which may create slip/trip hazard
- guards in place
- equipment in safe condition
- work area clear and organised
- nothing unusual/different
- emergency equipment available
- PPE is functional

It is expected that workers will be provided with clear directions, information, instruction, training and appropriate supervision regarding the relevant State/Territory OHS legislation, codes of practice, relevant industry standards, workplace procedures and work instructions.

Appropriate personnel for OHS referrals may include:

- employer
- supervisor
- employees elected as OHS representatives
- other personnel with OHS responsibilities.

OHS issues which may need to be raised by workers with designated personnel may include:

- recognition of hazards
- problems encountered in controlling risks associated with hazards
- observation of an injury and/or incident which occurred in the workplace
- clarification of understanding of OHS policies and procedures.

Evidence guide

Assessment context and methods

Assessment for this unit of competency will be in an operating plant. The unit will be assessed in as holistic a manner as is practical and may be integrated with the assessment of other relevant units of competency. Assessment will occur over a range of situations that will include disruptions to normal, smooth operation.

Simulation may be required to allow for timely assessment of parts of this unit of competency. Simulation should be based on the actual plant and will include walk throughs of the relevant competency components. Simulations may also include the use of case studies/scenarios and role plays.

This unit of competency requires a body of knowledge which will be assessed through questioning and the use of what if scenarios both on the plant (during demonstration of normal operations and walk throughs of abnormal operations) and off the plant.

Critical aspects

It is essential that the workplace OHS system be understood and that the importance of critical procedures be known. Competence must be demonstrated in the ability to recognise potential situations requiring action and then in implementing appropriate corrective action. The emphasis should be on the ability to avoid a critical incident rather than on recovery from a disaster.

Consistent performance should be demonstrated. In particular look for evidence of:

- recognition of hazards and application of appropriate risk controls
- recognition of other hazards in the workplace that may arise and reporting/taking actions according to procedure

These aspects may be best assessed using a range of scenarios/case studies/what ifs as the stimulus with a walk through forming part of the response. These assessment activities should include a range of routine problems that may have been generated from the past incident history of the plant and incidents on similar plants around the world.

Resource implications

Assessment will require access to an operating plant over an extended period of time, or a suitable method of gathering evidence of knowledge and understanding over a range of situations. A bank of scenarios/case studies/what ifs will be required as will a bank of questions which will be used to check the reasoning behind the observable actions.

Other assessment advice

It is expected that this competency may be applicable in combination with other industry, occupation or workplace-specific competencies. In all plants it may be appropriate to assess this unit concurrently with relevant teamwork and communication units.

Essential knowledge

Knowledge and understanding of the workplace OHS system sufficient to recognise situations affecting occupational health and safety and to take the appropriate action to rectify the situation. An awareness that OHS issues are regulated by State/Territory Acts, regulations, codes of practice and industry standards is required.

Employees need to be able to follow OHS procedures.

Competence includes the ability to

- apply and describe procedures for:
  - recognising hazards in the workplace
  - recognising safety signs and symbols
  - recognising hazards commonly found in the workplace and standard controls
  - reporting hazards identified to the designated person/according to procedure
- describe the rights and responsibilities of employees under the OHS legislation
- use and maintain appropriate PPE
- communicate OHS issues
- locate and follow OHS procedures under direct supervision.

Key competencies

1 Collect, analyse and organise information	**2** Communicate ideas and information	**3** Plan and organise activities	**4** Work with others and in teams	**5** Use mathematical ideas and techniques	**6** Solve problems	**7** Use technology
1	1	X	X	X	1	X

Unit title

PMAOHS110B Respond to emergency situation

Unit descriptor

This unit relates to the appropriate response to emergency situations for any new workers at the workplace, possibly delivered as part of an induction program. On completion, the learner knows the signals when an emergency situation takes place as well as the proper procedures to follow in order to save oneself from possible injury and/or death.

Prerequisites

This unit **has no** prerequisites.

Element	Performance criteria
1. Know when emergency happens.	1.1 Locate emergency signals and controls on machines and/or at the worksite 1.2 Interpret the signals to take appropriate action 1.3 Identify emergency where there is no mechanical/electronic signal even when an emergency has occurred.
2. Follow emergency procedures.	2.1 Report emergency according to procedures 2.2 Identify emergency leader 2.3 Follow workplace procedures and work instructions for dealing with a range of emergencies, under direct supervision of emergency leader 2.4 Describe the consequences of failing to follow these procedures and instructions 2.5 Describe what to do if the emergency leader cannot be located when emergency occurs.

Range of variables

Context

This unit of competency describes emergency situation requirements applicable to all workers. It involves the use of workplace policies and procedures to maintain a safe work environment for oneself and others.

This competency covers process manufacturing plants which may involve workplace hazards such as:

- chemicals and hazardous materials
- gases and liquids under pressure
- moving machinery
- materials handling

- working at heights, in restricted or confined spaces, or environments subjected to heat, noise, dusts or vapours.

Emergency situations may include:

- incidents resulting in serious injury
- fires
- chemical or oil spills
- gas leak or vapour emission
- utilities failure
- bomb scares.

Enterprise policies and procedures include those which directly or indirectly cover emergency situations, such as:

- emergency, fire and incident procedures
- hazard policies and procedures
- standard operating procedures
- safety procedures
- work instructions
- personal protective clothing and equipment procedures.

Designated personnel for emergency situation referrals may include:

- employer
- supervisor
- employees elected as emergency team leader
- other personnel with emergency team leader responsibilities.

Emergency issues that may need to be raised by workers with designated personnel may include:

- recognition of different types of emergencies
- problems encountered in control measures and implementation
- observation on injury and/or incident occurred in the workplace.

Emergency control includes:

- stop buttons/bars

Emergency signals include:

- visual — flashing lights
- auditory — alarms

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

Assessment context and methods

Assessment for this unit of competency will be on an operating plant. The unit will be assessed in as holistic a manner as is practical and may be integrated with the assessment of other relevant units of competency. Assessment will occur over a range of situations which will include disruptions to normal, smooth operation.

Simulation may be required to allow for timely assessment of parts of this unit of competency. Simulation should be based on the actual plant and will include walk throughs of the relevant competency components. Simulations may also include the use of case studies/scenarios and role plays.

This unit of competency requires a body of knowledge which will be assessed through questioning and the use of what if scenarios both on the plant (during demonstration of normal operations and walk throughs of abnormal operations) and off the plant.

Critical aspects

Competence must be demonstrated in the ability to recognise potential situations and then in implementing the appropriate action. The emphasis should be on the ability to follow proper procedures in order to save oneself from possible injury and/or death.

Consistent performance should be demonstrated. In particular look to see that:

- emergency situations are recognised and communicated promptly
- emergency procedures are understood and followed.

These aspects may be best assessed using a range of scenarios/case studies/what ifs as the stimulus with a walk through forming part of the response. These assessment activities should include a range of problems that may have been generated from the past incident history of the plant and incidents on similar plants around the world.

Resource implications

Assessment will require access to an operating plant over an extended period of time, or a suitable method of gathering evidence of operating ability over a range of situations. A bank of scenarios/case studies/what ifs will be required as will a bank of questions that will be used to probe the reasoning behind the observable actions.

Other assessment advice

It is expected that this competency may be applicable in combination with other industry, occupation or workplace-specific competencies. In all plants it may be appropriate to assess this unit concurrently with relevant teamwork and communication units.

Essential knowledge

Knowledge and understanding of the emergency response procedures sufficient to recognise emergency situations and then determine the appropriate action.

Knowledge of the relevant OHS and environmental requirements, and enterprise standard operating procedures, is required along with an ability to implement them in a manner that is relevant to emergency response practices.

Competence includes the ability to:

- identify location of emergency signals on machines and/or at the worksite
- identify emergency situations in which there is no mechanical/electronic signal
- report identified emergency signals/situations to the designated person
- identify the emergency leader
- follow emergency procedures.

Evidence of knowledge of all relevant workplace procedures will include:

- emergency, fire and accident procedures
- procedures for the use of personal protective clothing and equipment
- enterprise standard operating procedures (SOPs)

as is relevant to the required response to the emergency situation.

Key competencies

1 Collect, analyse and organise information	**2** Communicate ideas and information	**3** Plan and organise activities	**4** Work with others and in teams	**5** Use mathematical ideas and techniques	**6** Solve problems	**7** Use technology
1	1	1	1	1	1	1

Unit title

PMASUP100B Apply workplace procedures

Unit descriptor

This competency covers the skills and knowledge required to complete own work activities. The integration of OHS as part these activities is required and this is specifically addressed in PMAOHS100A. It includes the awareness and application of workplace procedures, and an introduction to the industry, the company and the employee's role within the organisation.

Prerequisites

This unit **has no** prerequisites.

Element	Performance criteria
1. Identify industry sector.	1.1 Identify the industry sector
	1.2 Recognise the major competitors in the industry and their products
	1.3 Identify career opportunities within the industry sector
	1.4 Explain the major external issues facing the industry.
2. Identify products and customers.	2.1 Identify company products
	2.2 Identify needs of external customers in line with enterprise priorities
	2.3 Identify needs of internal customers
	2.4 Identify the role of quality processes in meeting product standards
	2.5 Identify your role in meeting customer requirements.
3. Recognise plant structure and processes.	3.1 Identify key production sites/areas
	3.1 Explain role of individual in organisational structure
	3.2 Describe the production process within own work area and relationship with other parts of the production process.
4. Identify workplace role and responsibilities.	4.2 Identify company objectives
	4.3 Identify organisational policies and guidelines in relation to job role
	4.4 Describe key responsibilities including OHS of own section/team and functional area
	4.5 Identify task requirements and work role
	4.6 Explain individual role in achieving section/team, plant and company objectives.
5. Follow workplace procedures.	5.1 Identify existing sources of work instructions relevant to job role
	5.2 Follow work instructions in undertaking tasks
	5.3 Follow work instructions for recording process
	5.4 Seek advice from relevant personnel in clarifying work instructions when appropriate.

Range of variables

Context

This is a general competency that is performed by all operators in all areas of operation.

In large plants with multiple processes, it may apply to just one process in a plant if those processes do not interact with each other.

Sources of information may include:

- organisation's goals, objectives and targets
- business and performance plans
- access and equity principles and practice
- OHS policies, procedures and programs
- quality and continuous improvement processes and standards
- workplace procedures
- ethical standards
- workplace agreements and awards
- unions and industry associations.

It is applied within the limits of standard operating procedures and stringent requirements of occupational health and safety.

OHS

The OHS objectives and requirements are included in the organisation’s objectives and policies and team role statements.

All operations are subject to stringent OHS requirements and these must not be compromised at any time. Where there is an apparent conflict between performance criteria and OHS requirements, the OHS requirements take precedence.

Evidence guide

Assessment context and methods

Assessment for this unit of competency will be on an operating plant. The unit will be assessed in as holistic a manner as is practical and may be integrated with the assessment of other relevant units of competency. Assessment will occur over a range of situations which will include disruptions to normal, smooth operation.

Simulation may be required to allow for timely assessment of parts of this unit of competency (eg, elements 2 and 3). Simulation should be based on the actual plant and will include walk throughs of the relevant competency components. Simulations may also include the use of case studies/scenarios and role plays.

This unit of competency requires a routine body of knowledge which will be assessed through questioning and the use of what if scenarios both on the plant (during demonstration of normal operations and walk throughs of abnormal operations) and off the plant.

Critical aspects

Consistent performance should be demonstrated. In particular look to see that:

- industry sector and major issues facing the industry are recognised
- main internal and external customers are identified
- role of individual and team/section is identified in terms of meeting company objectives (including safety objectives) and customer requirements
- relevant workplace policies and procedures are identified and followed
- tasks are performed in accordance with safety requirements/the quality system/workplace procedures
- appropriate documentation as defined by procedures is correctly completed.

These aspects may be best assessed using a range of scenarios/case studies/what ifs as the stimulus with a walk through forming part of the response.

Resource implications

Assessment will require access to an operating plant over an extended period of time, or a suitable method of gathering evidence of operating ability over a range of situations. A bank of scenarios/case studies/what ifs will be required as will a bank of questions which will be used to probe the reasoning behind the observable actions.

Other assessment advice

In all plants it may be appropriate to assess this unit concurrently with relevant teamwork and communication units. If competency has not already been achieved in PMAOHS100 then these units should be co-assessed.

Essential knowledge

Competence includes an understanding of the products and functions of the organisation and the employee's role in completing tasks to meet customer, company and section/function objectives. In particular it includes the ability to:

- understand relevant organisational policies, plans and procedures
- identify production processes relevant to work role
- identify work requirements and relevant workplace documents
- request advice, effectively question and follow instructions
- identify quality standards.

Key competencies

1 Collect, analyse and organise information	**2** Communicate ideas and information	**3** Plan and organise activities	**4** Work with others and in teams	**5** Use mathematical ideas and techniques	**6** Solve problems	**7** Use technology
1	1	1	1	1	1	1

Unit title

PMASUP110A Relay and respond to information

Unit descriptor

This unit of competency covers being able to receive and pass on written and oral messages and to provide relevant information in response to requests within time lines. Everyday workplace language is used, including some mathematical language. The competency unit applies to a wide range of information sources and documentation.

Prerequisites

This unit **has no** prerequisites.

Element	Performance criteria
1. Receive and relay oral and written messages.	1.1 Understand the message 1.2 Accurately record the message 1.3 Relay message accurately to appropriate person or section within designated timelines.
2. Interpret oral or written messages.	2.1 Clarify message if necessary 2.2 Take appropriate action.
3. Respond to information.	3.2 Acknowledge and understand the request for information. 3.3 Access information from appropriate sources 3.4 Relay information to appropriate person or section.

Range of variables

Context

Communication may be from a range of social, cultural and ethnic backgrounds and maybe verbal or non verbal.

This competency includes the following indicative information sources and documentation:

- standard operating procedures
- material safety data sheets
- job cards
- maintenance logs
- enterprise policies, eg, telephone protocol, codes of practice.

This competency includes items of equipment such as:

- telephone
- two way radio
- computer.

Types of text may include:

- short sentences

- symbols
- codes
- signs
- sketches.
- Text may be conveyed in:
- printed form
- screen based.

Language may be:

- everyday workplace use
- technical terms.

All operations are performed in accordance with standard operating procedures.

OHS

All operations are subject to stringent OHS requirements and these must not be compromised at any time. Where there is an apparent conflict between performance criteria and OHS requirements, the OHS requirements take precedence.

Evidence guide

Assessment context and methods

The unit will be assessed in as holistic a manner as is practical and may be integrated with the assessment of other relevant units of competency.

Simulation may be appropriate assessment for this unit of competency. Simulation should be based on the actual plant and will include walk throughs of the relevant competency components. Simulations may also include the use of case studies/ scenarios and role plays.

This unit of competency requires a routine body of knowledge which will be assessed through questioning and the use of what if scenarios both on the plant (during demonstration of normal operations and walk throughs of abnormal operations) and off the plant.

Critical aspects

Competence must be demonstrated in the ability to provide and assess all required information and that the information provided both verbally and in writing is completed in a clear and concise manner that is easily understood by others and in accordance with workplace requirements.

Consistent performance should be demonstrated. In particular look to see that:

- written communication is clear, concise and accurate
- all information is provided in an efficient, effective, courteous and timely manner
- calls are answered within industry timelines
- messages are clear, concise and accurate
- listening is attentive
- information requests are identified and questions formulated to clarify work requirements or instructions.

These aspects may be best assessed using a range of scenarios/case studies/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, unusual and improbable 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.

Resource implications

Assessment will require access to an operating plant over an extended period of time, or a suitable method of gathering evidence of operating ability over a range of situations. A bank of scenarios/case studies/what ifs will be required as will a bank of questions which will be used to probe the reasoning behind the observable actions.

Other assessment advice

In all plants it may be appropriate to assess this unit concurrently with relevant teamwork and communication units. Consider co-assessment with:

- PMASUP210A Process and record information.

Essential knowledge

Competence to include the ability to apply and explain:

- importance of workplace documentation
- enterprise operational, quality and safety procedures
- routine workplace documents
- workplace codes including numbers, symbols, signs, colours and other codes.

Key competencies

1 Collect, analyse and organise information	**2** Communicate ideas and information	**3** Plan and organise activities	**4** Work with others and in teams	**5** Use mathematical ideas and techniques	**6** Solve problems	**7** Use technology
1	1	1	1	1	1	1

Unit title

PMASUP120A Follow environmental work practices

Unit descriptor

This competency covers the awareness of operating personnel of environmental issues and responsibilities and their ability to work according to enterprise environmental policies and procedures to minimise environmental threats.

Prerequisites

This unit **has no** prerequisites.

Element	Performance criteria
1. Follow workplace procedures for environmentally responsible work practices.	1.1 Recognise and follow workplace procedures and work instructions for environmental work practices while under direct supervision, and seek clarification where doubts arise 1.2 Recognise environmental hazards and negative impacts in the workplace whilst under direct supervision and report to designated personnel according to workplace procedures 1.3 Respond to changes to work practices positively and promptly, in accordance with organisational requirements.
2. Participate in the improvement of environmental work practices.	2.1 Raise environmental issues with designated personnel in line with workplace policies and practices 2.2 Make suggestions for alternative workplace practices with reduced environmental impact.
3. Respond to abnormal environmental discharge/ emission.	3.1 Report abnormal discharge/emissions to appropriate personnel 3.2 Apply containment procedures in accordance with standard operating procedures where appropriate 3.3 Follow safety procedures correctly and utilise personal protective equipment as required.

Range of variables

Context

This competency is performed by all operators in all plants. It reflects the industry commitment to minimise negative environmental impacts and meet the regulatory requirements on all plants and all personnel.

This competency unit includes:

- Awareness of the environment and the effects on the environment of the organisations:
- liquid waste
- solid waste

- gas/fume/vapour/smoke emissions, including fugitive emissions
- hazardous materials
- excessive energy and water use
- excessive noise

and the workplace practices that can be used to minimise or prevent these effects.

Indicative functions such as:

- monitoring of all sensors
- communication, using in-plant reporting system
- verbal
- electronic
- written
- initiating first response to an environmental incident in accordance with standard operating procedures (SOPs).

Resources such as:

- containment equipment
- personal protective equipment
- monitoring equipment
- waste segregation and recycling equipment.

Emissions/discharges include:

- noise
- light
- odour
- gas
- smoke
- vapour
- liquid and solids
- particulates
- fumes.

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

Assessment context and methods

Assessment for this unit of competency will be on an operating plant. The unit will be assessed in as holistic a manner as is practical and may be integrated with the assessment of other relevant units of competency. Assessment will occur over a range of situations which will include disruptions to normal, smooth operation.

Simulation may be required to allow for timely assessment of parts of this unit of competency. Simulation should be based on the actual plant and will include walk

throughs of the relevant competency components. Simulations may also include the use of case studies/scenarios and role plays.

This unit of competency requires a body of knowledge which will be assessed through questioning and the use of what if scenarios both on the plant (during demonstration of normal operations and walk throughs of abnormal operations) and off the plant.

Critical aspects

Competence must be demonstrated in the ability to recognise potential situations requiring action and then in implementing appropriate corrective action. The emphasis should be on the ability to avoid critical environmental incidents rather than on recovery from a disaster.

Consistent performance should be demonstrated. In particular look to see that:

- deviations from desired conditions are recognised
- action specified in the standard operating procedures (SOPs) is carried out
- the impact of work practices/actions on the environment is understood.

These aspects may be best assessed using a range of scenarios/case studies/what ifs as the stimulus with a walk through forming part of the response. These assessment activities should include a range of problems that may have been generated from the past incident history of the plant and incidents on similar plants around the world.

Resource implications

Assessment will require access to an operating plant over an extended period of time, or a suitable method of gathering evidence of operating ability over a range of situations. A bank of scenarios/case studies/what ifs will be required as will a bank of questions which will be used to probe the reasoning behind the observable actions.

Other assessment advice

In all plants it may be appropriate to assess this unit concurrently with relevant teamwork and communication units.

In a major hazard facility, it may be appropriate to assess this unit concurrently with:

- PMAOHS100 Follow OHS procedures.

Essential knowledge

Knowledge and understanding of the relevant OHS, environmental requirements and standard operating procedures (SOPs) with an ability to implement them in a manner which is relevant to the operation of the equipment item.

Competence includes the ability to:

- apply the standard operating procedures (SOPs)
- recognise the environmental impacts of work practices and take steps to minimise those impacts
- apply waste minimisation practices in the use of materials, water and energy
- show an awareness of:
  - external licensing requirements
  - internal environmental control standards
  - severity of environmental hazards of materials being handled
  - likely impact on the environment of materials and process

Key competencies

1 Collect, analyse and organise information	**2** Communicate ideas and information	**3** Plan and organise activities	**4** Work with others and in teams	**5** Use mathematical ideas and techniques	**6** Solve problems	**7** Use technology
1	1	1	1	1	1	1

Unit title

PMASUP130B Follow established work plan

Unit descriptor

This unit of competency covers the ability to complete tasks individually or in a team context. The tasks involve established routines and procedures using allocated resources with access to readily available procedures and advice. Work plans may need to be modified with supervisor/team leader agreement to suit changing conditions and priorities.

Work activities may include:

- organisation of materials and equipment
- completion of tasks in accordance with schedule/plan
- completion of relevant paperwork.

Prerequisites

This unit **has no** prerequisites.

Element	Performance criteria
1. Identify work activities.	1.1 Identify team tasks if appropriate 1.2 Identify work activities that are allocated to the individual 1.3 Prioritise work activities as directed.
2. Organise daily work activities.	2.1 Break work activities down into small achievable components 2.2 Identify hazards and implement required controls 2.3 Record activities.
3. Follow work plan.	3.1 Locate relevant standard operating procedures 3.2 Undertake tasks in accordance with schedule/plan 3.3 Maintain output in accordance with schedule/plan 3.4 Follow prescribed and routine work related sequences.
4. Modify work plan.	4.1 Identify changing needs/conditions 4.2 Identify the safety implications of changes 4.3 Seek assistance from relevant personnel when difficulties arise 4.4 Review tasks and priorities in line with changing needs/conditions with a change of instruction from appropriate personnel 4.5 Update work plan taking account of safety implications and communicate to appropriate personnel.

Range of variables

Context

Work and tasks may be allocated through managers, supervisors, team leaders, work schedules or plans. They may be individual tasks and jobs or team function work schedules.

This competency includes the following indicative information sources and documentation:

- company policy and permit control systems
- standard operating procedures
- materials safety data sheets
- job cards
- maintenance logs
- plant drawings.

This competency includes items of equipment such as:

- plant equipment.

All operations are performed in accordance with standard operating procedures.

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

Assessment context and methods

Assessment for this unit of competency will be on an operating plant. The unit will be assessed in as holistic a manner as is practical and may be integrated with the assessment of other relevant units of competency. Assessment will occur over a range of situations which will include disruptions to normal, smooth operation.

Simulation may be required to allow for timely assessment of parts of this unit of competency (eg, element 4). Simulation should be based on the actual plant and will include walk throughs of the relevant competency components. Simulations may also include the use of case studies/scenarios and role plays.

This unit of competency requires a body of knowledge which will be assessed through questioning and the use of what if scenarios both on the plant (during demonstration of normal operations and walk throughs of abnormal operations) and off the plant.

Critical aspects

Competence must be demonstrated in the ability to recognise and analyse potential situations requiring action and then in implementing appropriate corrective action.

The emphasis should be on the ability to stay out of trouble rather than on recovery from a problem.

Consistent performance should be demonstrated. In particular look to see that:

- hazards are identified and controlled
- work schedules are interpreted and understood and instructions acted upon
- relevant procedures are followed
- resources and time are effectively and efficiently utilised
- potential disruptions or changed circumstances are recognised and work plans modified in conjunction with relevant personnel
- assistance is sought from relevant personnel when difficulties arise.

These aspects may be best assessed using a range of scenarios/case studies/what ifs as the stimulus with a walk through forming part of the response.

Resource implications

Assessment will require access to an operating plant over an extended period of time, or a suitable method of gathering evidence of operating ability over a range of situations. A bank of scenarios/case studies/what ifs will be required as will a bank of questions which will be used to probe the reasoning behind the observable actions.

Other assessment advice

In all plants it may be appropriate to assess this unit concurrently with relevant teamwork and communication units.

Essential knowledge

Competence to include the ability to apply and explain:

- enterprise quality, operational and safety procedures
- importance of workplace documentation
- routine work planning processes
- potential safety implications of modifying the work plan
- job outcomes, standards and priorities
- equipment and processes used in the workplace
- hazards associated with the process
- methods of controlling the hazards according to procedures.

Key competencies

1 Collect, analyse and organise information	**2** Communicate ideas and information	**3** Plan and organise activities	**4** Work with others and in teams	**5** Use mathematical ideas and techniques	**6** Solve problems	**7** Use technology
1	1	1	1	1	1	1

Unit title

BSATEM101A Participate in a team to achieve designated tasks

Unit descriptor

This unit covers completing allocated tasks in a team context within enterprise timelines.

Prerequisites

- This unit **has no** prerequisites.

Element	Performance criteria
1. Complete allocated tasks.	1.1 Tasks of the team as a whole are identified 1.2 Task(s) allocated to the individual as part of the team are identified 1.3 Allocated tasks are completed within designated timelines 1.4 Assistance is sought from other team members when difficulties in achieving allocated tasks arise 1.5 Information and feedback provided by others in the workgroup is acknowledged.

Range of variables

- enterprise procedures and policies
- size of team.

Evidence guide

Critical aspects

Evidence of satisfactory performance in this unit is best obtained by observation of performance, questioning and discussion.

Specifically, to indicate understanding and knowledge of participating in a team in accordance with enterprise procedures and policies.

Check that:

- there is a willingness to participate
- there is an understanding of teamwork
- allocated tasks are completed within timelines.

Unit title

PMAOHS200B Participate in workplace safety procedures

Unit descriptor

On completion of this unit, the worker will be able to accurately identify occupational health and safety hazards, and assess risk, as well as follow instructions and procedures in the workplace with minimal supervision. The worker will also be capable of participating in and contributing to OHS management issues.

Prerequisites

This unit **has no** prerequisites.

Element	Performance criteria
1. Identify hazards and assess risk.	1.1 Identify hazards in the work area before and during work 1.2 Identify controls for these hazards from procedures 1.3 Assess effectiveness of controls within the scope of authority 1.4 Identify and report remaining risk.
2. Follow procedures for risk control.	2.1 Control risks when working under minimal supervision by following workplace procedures. 2.2 Select, use and maintain relevant PPE.
3. Follow emergency procedures	3.4 Recognise emergency situations 3.5 Take appropriate initial emergency action 3.6 Follow procedures for dealing with a range of emergencies
4. Initiate suggestions to enhance task/job-specific safety.	4.1 Raise task and/or job specific OHS issues with appropriate people in accordance with workplace procedures 4.2 Contribute to participative arrangements for OHS management in the workplace within organisational procedures and the scope of responsibilities and competencies 4.3 Provide input to minimise hazards in work area in line with organisational OHS procedures 4.4 Provide input to opportunities for development of work group's competencies in relation to OHS 4.5 Support the implementation of procedures to control risks using the hierarchy of control and in accordance with organisational procedures 4.6 Report to appropriate people in accordance with workplace procedures when non-routine hazards arise.

Range of variables

Context

This unit of competency describes OHS requirements applicable for all workers whose work involves the use of workplace policies and procedures to maintain a safe work environment for themselves and others.

This competency covers process manufacturing plants which may involve workplace hazards such as:

- chemicals and hazardous materials
- gases and liquids under pressure
- moving machinery
- materials handling
- working at heights, in restricted or confined spaces, or in environments subjected to heat, noise, dusts or vapours.

Emergencies include:

- incidents leading to serious injury and/or property damage
- fires
- chemical spills
- bomb scares.

Enterprise policies and procedures include those which directly or indirectly cover OHS issues, such as:

- hazard policies and procedures
- standard operating procedures
- safety procedures
- work instructions
- emergency, fire and accident procedures
- personal protective clothing and equipment procedures.

It is expected that workers will be provided with clear directions, information, instruction, training and appropriate supervision regarding the relevant State/Territory OHS legislation, codes of practice, relevant industry standards, workplace procedures and work instructions.

Designated personnel for OHS referrals may include:

- employer
- supervisor
- employees elected as OHS representatives
- other personnel with OHS responsibilities.

OHS issues which may need to be raised by workers with designated personnel may include:

- recognition of hazards and assessment of risk
- problems encountered in risk control measures and implementation
- observation of an injury and/or incident
- clarification on understanding of OHS policies and procedures.

Evidence guide

Assessment context and methods

Assessment for this unit of competency will be on an operating plant. The unit will be assessed in as holistic a manner as is practical and may be integrated with the assessment of other relevant units of competency. Assessment will occur over a range of situations which will include disruptions to normal, smooth operation.

Simulation may be required to allow for timely assessment of parts of this unit of competency. Simulation should be based on the actual plant and will include walk throughs of the relevant competency components. Simulations may also include the use of case studies/scenarios and role plays.

This unit of competency requires a significant body of knowledge which will be assessed through questioning and the use of what if scenarios both on the plant (during demonstration of normal operations and walk throughs of abnormal operations) and off the plant.

Critical aspects

Consistent safe working is the critical aspect for which evidence should be sought.

It is essential that the workplace OHS system is understood and that the importance of critical procedures is known. Competence must be demonstrated in the ability to recognise potential situations requiring action and then in implementing appropriate corrective action.

Consistent performance should be demonstrated. In particular look for evidence of:

- understanding of all relevant workplace procedures including:
  - hazard policies and procedures
  - emergency, fire and accident procedures
  - procedures for the use of personal protective clothing and equipment
  - hazard identification and risk assessment procedures
  - job operating procedures and work instructions
- knowledge and understanding of:
  - hazards and potential risks in the workplace
  - the consultation processes, either general or specific to OHS
  - occupational health and safety information
- knowledge of specific hazard policies and use of hazard procedures (eg, housekeeping and inspections).

These aspects may be best assessed using a range of scenarios/case studies/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, unusual and extreme 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.

Resource implications

Assessment will require access to an operating plant over an extended period of time, or a suitable method of gathering evidence of operating ability over a range of situations. A bank of scenarios/case studies/what ifs will be required as will a bank of questions which will be used to probe the reasoning behind the observable actions.

Other assessment advice

It is expected that this competency may be applicable in combination with other industry, occupation or workplace-specific competencies. In all plants it may be appropriate to assess this unit concurrently with relevant teamwork and communication units.

Essential knowledge

Knowledge and understanding of the workplace OHS system and relevant industry standards sufficient to participate in OHS activities within the scope of their responsibilities and competencies.

Competence includes the ability to:

- apply and describe:
  - identification of hazards
  - identification of standard controls for the hazards
  - simple evaluation of the effectiveness of the controls
  - awareness of the need for further action
  - rights and responsibilities of employees under the OHS legislation
- locate, understand and follow workplace OHS procedures
- interpret signs and symbols including emergency alarms
- recognise hazards common to the industry and in their own workplace
- sources of OHS information within the workplace
- apply and explain:
  - other management systems and procedures for occupational health and safety
  - the hierarchy of control

Key competencies

1 Collect, analyse and organise information	**2** Communicate ideas and information	**3** Plan and organise activities	**4** Work with others and in teams	**5** Use mathematical ideas and techniques	**6** Solve problems	**7** Use technology
2	2	2	2	1	2	2

Unit title

PMAOHS210B Undertake first response to non-fire incidents

Unit descriptor

This competency unit deals with recognising and responding to an emerging incident (except for fire) to provide an appropriate first response. The worker is not expected to deal with the emerging incident, but to provide an initial first response in order to contain the incident and/or secure the immediate area in order to minimise resultant damages and loss. In this unit it is assumed that the worker is acting according to established workplace procedures.

Prerequisites

This unit **has** the prerequisite of:

- PMAOHS110A Respond to emergency situation.

Element	Performance criteria
1. Assess level of severity.	1.1 Recognise an incident has occurred or is about to occur 1.2 Access hazard information as appropriate 1.3 Assess frequency, duration, actual and potential outcome 1.4 Evaluate and communicate in a timely and appropriate manner the location, nature and extent of the emergency.
2. Undertake routine response to minimise affect of the emergency.	2.1 Determine first response requirements to contain the emergency or evacuate the affected areas 2.2 Select the appropriate response from the emergency procedures and equipment 2.3 Apply emergency procedures as appropriate 2.4 Clear and secure the emergency area 2.5 Safely locate, access and operate emergency response equipment.
3. Notify responsible authorities.	3.1 Follow emergency reporting procedures 3.2 Identify appropriate authorities and notify 3.3 Clearly and unambiguously communicate information concerning the emergency in a timely manner.
4. Undertake safe evacuation.	4.1 Evacuate the area in a safe and controlled manner when first response has failed to control the emergency or has proven inappropriate 4.2 Secure the immediate area of the emergency to ensure no further loss occurs to people, equipment, materials, process and environment.

Range of variables

Context

This competency covers all emerging incidents except for fire.

This competency covers process manufacturing plants which may involve workplace hazards such as:

- chemicals and hazardous materials
- gases and liquids under pressure
- moving machinery
- materials handling
- working at heights, in restricted or confined spaces, or environments subjected to heat, noise, dusts or vapours.

Emerging incidents may include:

- accidents
- chemical or oil spills
- gas leak or vapour emission
- utilities failure
- bomb scares.

Required functions include:

- containment of incident eg, chemical/oil spill or gas/vapour leak
- communication with internal and external personnel.

Required resources and equipment may include:

- personal protective equipment such as breathing apparatus
- emergency response equipment such as hand held extinguishers, hose reels, fire blankets
- evacuation equipment
- survival equipment
- standard operating procedures (SOPs)
- external personnel such as:
- police
- fire brigade
- ambulance.

Enterprise policies and procedures include those which directly or indirectly cover emergency situations, such as:

- emergency, fire and accident procedures
- hazard policies and procedures
- standard operating procedures (SOPs)
- safety procedures
- work instructions
- personal protective clothing and equipment procedures.

Designated personnel for internal emergency situation referrals may include:

- employer
- supervisor
- employees elected as emergency team leader
- other personnel with emergency team leader responsibilities.
- Emergency issues that may need to be raised by workers with designated personnel may include:
- recognition of different types of emergencies
- problems encountered in control measures and implementation
- observation on injury and/or incident occurred in the workplace.

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

Assessment context and methods

Assessment for this unit of competency will be on an operating plant. The unit will be assessed in as holistic a manner as is practical and may be integrated with the assessment of other relevant units of competency. Assessment will occur over a range of situations which will include disruptions to normal, smooth operation.

Simulation may be required to allow for timely assessment of parts of this unit of competency. Simulation should be based on the actual plant and will include walk throughs of the relevant competency components. Simulations may also include the use of case studies/scenarios and role plays.

This unit of competency requires a body of knowledge which will be assessed through questioning and the use of what if scenarios both on the plant (during demonstration of normal operations and walk throughs of abnormal operations) and off the plant.

Critical aspects

Competence must be demonstrated in the ability to recognise and analyse potential situations requiring action and then in implementing the appropriate corrective action. The reasoning process behind the problem analysis and determining the required actions should be assessed. The emphasis should be on the ability to minimise the affect of an emergency situation.

Consistent performance should be demonstrated. In particular look to see that:

- emergency situations are recognised and communicated promptly
- action is taken to ensure that the effects of the emergency situation are controlled promptly
- potential to involve others in the emergency is recognised and appropriately communicated
- emergency procedures are understood and followed.

These aspects may be best assessed using a range of scenarios/case studies/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, unusual and extreme situations that may have been generated from the past incident history of the plant, incidents on similar plants around the world, hazard analysis activities (eg, HAZOP) and similar sources.

Resource implications

Assessment will require access to an operating plant over an extended period of time, or a suitable method of gathering evidence of operating ability over a range of situations. A bank of scenarios/case studies/what ifs will be required as will a bank of questions which will be used to probe the reasoning behind the observable actions.

Other assessment advice

In all plants it may be appropriate to assess this unit concurrently with relevant teamwork and communication units.

In a major hazard facility, it may be appropriate to assess this unit concurrently with:

- PMAOHS200 Participate in workplace safety procedures
- PMASUP220 Monitor and control environmental hazards.

Essential knowledge

Knowledge and understanding of the emergency response procedures and equipment, sufficient to recognise standard and non-standard situations and then determine the appropriate action which is consistent with operating guidelines.

Knowledge of the relevant OHS and environmental requirements, and enterprise standard operating procedures is required along with an ability to implement them in a manner that is relevant to emergency response practices.

Competence includes the ability to:

- apply and explain procedures for:
  - identifying hazard and emergency signs and labels
  - evacuation of different areas
  - operating various pieces of emergency response equipment.
- communicate details of an emergency situation clearly.

Evidence of knowledge of all relevant workplace procedures will include:

- principles of operation of the emergency response equipment
- hazards policies and procedures
- emergency, fire and accident procedures
- procedures for the use of personal protective clothing and equipment
- enterprise standard operating procedures (SOPs).

Key competencies

1 Collect, analyse and organise information	**2** Communicate ideas and information	**3** Plan and organise activities	**4** Work with others and in teams	**5** Use mathematical ideas and techniques	**6** Solve problems	**7** Use technology
2	2	2	2	1	2	2

Unit title

PMAOHS211A Prepare equipment for emergency response

Unit descriptor

This competency unit relates to the preparation of equipment used to respond to emergency situations.

Prerequisites

This unit **has no** prerequisites.

Element	Performance criteria
1. Identify emergency equipment.	1.1 Locate emergency equipment 1.2 Ensure access is provided to emergency equipment.
2. Inspect and assemble emergency equipment.	2.1 Inspect emergency equipment for faults or damage 2.2 Secure couplings/connections and operational condition 2.3 Assemble equipment in accordance with manufacturer's specifications 2.4 Identify and report any missing or damaged components.
3. Carry out minor servicing of equipment.	3.1 Maintain and clean equipment according to specifications/procedures 3.2 Conduct servicing in accordance with specifications/procedures 3.3 Ensure equipment is 'made-ready' and stored in designated location 3.4 Ensure equipment functions in accordance with specifications.
4. Report and record equipment status.	4.1 Record and report equipment status 4.2 Raise maintenance requests as required 4.3 Undertake corrective actions as required.

Range of variables

Context

This unit of competency includes all items of equipment that are required for emergency response.

Emergency response equipment may include:

- fire extinguishers
- fire hoses
- fire blankets
- pumps
- branches, fittings and nozzles
- foam equipment/units
- personal protective clothing

- breathing apparatus
- deluge/safety showers.

Required functions include:

- inspections
- visual
- mechanical
- servicing
- lubrication
- pressure checks
- refilling
- communication
- maintenance
- external authorities.

This competency covers process manufacturing plants which may involve:

Workplace hazards such as:

- chemicals and hazardous materials
- gases and liquids under pressure
- moving machinery
- materials handling
- working at heights, in restricted or confined spaces, or environments subjected to heat, noise, dusts or vapours.

Emerging incidents may include:

- accidents
- fires
- chemical or oil spills
- gas leak or vapour emission
- utilities failure
- bomb scares.

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

Assessment context and methods

Assessment for this unit of competency will be on an operating plant. The unit will be assessed in as holistic a manner as is practical and may be integrated with the

assessment of other relevant units of competency. Assessment will occur over a range of situations which will include disruptions to normal, smooth operation.

Simulation may be required to allow for timely assessment of parts of this unit of competency. Simulation should be based on the actual plant and will include walk throughs of the relevant competency components. Simulations may also include the use of case studies/scenarios and role plays.

This unit of competency requires a body of knowledge which will be assessed through questioning and the use of what if scenarios both on the plant (during demonstration of normal operations and walk throughs of abnormal operations) and off the plant.

Critical aspects

Competence must be demonstrated in the ability to recognise and analyse potential situations requiring action and then in implementing appropriate action. The emphasis should be on the ability to minimise the affect of an emergency situation.

Consistent performance should be demonstrated. In particular look to see that:

- early warning signs of equipment in need of servicing are recognised
- equipment is always 'made ready'
- equipment is always stored in the designated location at all times when not in use
- access to equipment is available at all times when not in use.

These aspects may be best assessed using a range of scenarios/case studies/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, unusual and extreme situations that may have been generated from the past incident history of the plant, incidents on similar plants around the world, hazard analysis activities (eg, HAZOP) and similar sources.

Resource implications

Assessment will require access to an operating plant over an extended period of time, or a suitable method of gathering evidence of operating ability over a range of situations. A bank of scenarios/case studies/what ifs will be required as will a bank of questions which will be used to probe the reasoning behind the observable actions.

Other assessment advice

In all plants it may be appropriate to assess this unit concurrently with relevant teamwork and communication units.

In a major hazard facility, it may be appropriate to assess this unit concurrently with:

- PMAOHS200 Participate in workplace safety procedures.

Essential knowledge

Knowledge and understanding of the emergency response procedures and equipment, sufficient to recognise standard and non-standard situations, with regards to the equipment used and then determine the appropriate action which is consistent with operating guidelines.

Knowledge of the relevant OHS and environmental requirements, and enterprise standard operating procedures is required along with an ability to implement them in a manner that is relevant to emergency response practices.

Competence includes the ability to

- apply and explain procedures for:
  - assembling and operating various pieces of emergency response equipment
  - servicing various pieces of emergency response equipment
  - storing various pieces of emergency response equipment.

Evidence of knowledge of all relevant workplace procedures will include:

- principles of operation of the emergency response equipment
- hazards policies and procedures
- emergency, fire and accident procedures
- procedures for the use of personal protective clothing and equipment
- enterprise standard operating procedures (SOPs).

Key competencies

1 Collect, analyse and organise information	**2** Communicate ideas and information	**3** Plan and organise activities	**4** Work with others and in teams	**5** Use mathematical ideas and techniques	**6** Solve problems	**7** Use technology
2	1	1	2	1	2	2

Unit title

PMAOHS212B Undertake first response to fire incidents

Unit descriptor

This unit of competency is designed to ensure that an appropriate first response to fire incidents in onshore and offshore situations/emergencies is achieved. An ability to work under supervision and/or alone is required. This competency may be delivered as part of an induction program.

Prerequisites

This unit **has no** prerequisites.

Element	Performance criteria
1. Identify fire emergency and raise alarm.	1.1 Evaluate and communicate the location, nature and extent of the fire emergency in a timely and appropriate manner 1.2 Determine first response requirements in order to evaluate the need to attack the fire emergencies or evacuate the affected areas.
2. Initiate basic fire responses.	2.1 Maintain personal safety at all times in accordance with OHS guidelines 2.2 Put on appropriate protective clothing in accordance with the organisation's procedures 2.3 Select appropriate extinguishing agents from a knowledge of fire and fuel types 2.4 Operate basic fighting equipment safely, according to the manufacturers' specifications and the organisation's procedure, in order to contain the fire emergency 2.5 Observe changing conditions at the fire and their effects on fire behaviour are noted and reported.
3. Notify responsible authorities.	3.1 Follow emergency reporting procedures 3.2 Identify appropriate authorities and notify 3.3 Clearly and unambiguously communicate information concerning the emergency in a timely manner.
4. Undertake safe evacuation.	4.1 Evacuate area in a safe and controlled manner when first response has failed to control the fire emergency, or has proven inappropriate 4.2 Immediate area of the emergency is secured to ensure no further loss occurs to people, equipment, process and environment.

Range of variables

Context

Those persons working, operating or who regularly travel within an onshore or offshore installation or facility would require this competency.

This unit could be applied to any of the following installation or facilities:

- onshore/offshore rig/installation
- island based facility
- floating production vessel or platform
- onshore production, processing pipeline systems and/or storage facilities
- pipeline easements
- maintenance bases.

Required resources may include:

- standard operating procedures (SOPs)
- external personnel such as:
- police
- fire brigade
- ambulance.

Equipment may include:

- personal protective equipment
- such as breathing apparatus
- hand held extinguishers
- hose reels
- fire blankets
- smoke or self rescue respirators
- mobile and portable equipment
- first aid equipment
- pipeline repair clamps
- lamb air movers
- barricades and signage
- communications equipment: two way radios, mobile and satellite phones and pagers.

Fire extinguishing media may include:

- water
- foam
- extinguishing powder
- gaseous extinguishing agents
- vapourising liquids
- other fire extinguishing substances.

On-scene hazards may include:

- smoke, darkness and heat

- electricity
- gas
- structural hazards
- structural collapse
- industrial — machinery, equipment, product
- hazardous products and materials
- unauthorised personnel.

Firefighting tactics may include:

- direct attack
- indirect attack
- combination attack
- exposure protection
- but does NOT include internal/offensive attacks.

Signs to observe indicating need to evacuate may include:

- failure to control fire with first response methods
- adverse change in weather conditions
- change in flame colour and size
- change in smoke colour
- fire spread and/or other material becoming involved in fire
- signs of structural collapse.

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

Assessment context and methods

Assessment for this unit of competency will be on an operating plant. The unit will be assessed in as holistic a manner as is practical and may be integrated with the assessment of other relevant units of competency. Assessment will occur over a range of situations which will include disruptions to normal, smooth operation.

Simulation may be required to allow for timely assessment of parts of this unit of competency. Simulation should be based on the actual plant and will include walk throughs of the relevant competency components. Simulations may also include the use of case studies/scenarios and role plays.

This unit of competency requires a significant body of knowledge which will be assessed through questioning and the use of what if scenarios both on the plant (during demonstration of normal operations and walk throughs of abnormal operations) and off the plant.

Critical aspects

Competence must be demonstrated in the ability to recognise and analyse potential situations requiring action and then in implementing appropriate corrective action. The emphasis should be on the ability to minimise the effects of the critical situation.

Consistent performance should be demonstrated. In particular look for:

- identification of different types of fires
- selection and use of appropriate extinguishing agent
- application of defensive firefighting tactics and techniques
- selection and use of appropriate protective clothing.

These aspects may be best assessed using a range of scenarios/case studies/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, unusual and improbable situations which may have been generated from the past incident history of the plant, incidents on similar plants around the world, hazard analysis activities (eg, HAZOP) and similar sources.

Resource implications

Assessment will require access to an operating plant over an extended period of time, or a suitable method of gathering evidence of operating ability over a range of situations. A bank of scenarios/case studies/what ifs will be required as will a bank of questions that will be used to probe the reasoning behind the observable actions.

Other assessment advice

In all plants it may be appropriate to assess this unit concurrently with relevant teamwork and communication units.

In a major hazard facility, it may be appropriate to assess this unit concurrently with:

- PMAOHS200 Participate in workplace safety procedures.

Essential knowledge

Knowledge and understanding of the process sufficient to recognise fire situations and then determine an action that is appropriate within operating guidelines and the scope of their responsibilities and competencies. It would be expected that a person would have skills in fire identification, assessment and application of control measures and be able to demonstrate the use and application of a range of first response firefighting safety equipment.

A person undertaking this competency must be able to demonstrate knowledge of

- site specific alarm procedures
- characteristics of fire and fuel types
- composition and uses of extinguishing agents
- basic fire fighting equipment
- site or enterprise emergency procedures and response plans
- site specific isolation procedures
- liaison techniques with third parties
- procedures to isolate pipeline sectors.

Key competencies

1 Collect, analyse and organise information	**2** Communicate ideas and information	**3** Plan and organise activities	**4** Work with others and in teams	**5** Use mathematical ideas and techniques	**6** Solve problems	**7** Use technology
2	1	1	2	1	2	2

Unit title

PMAOHS213A Undertake fire control and emergency rescue

Unit descriptor

This unit of competency is designed to allow a person to function as a member of an emergency response team in order to meet and respond to fire emergencies in an onshore and/or offshore facility. An ability to work under supervision or alone is required. This competency may be delivered as part of an induction program.

Prerequisites

This unit **has no** prerequisites.

Element	Performance criteria
1. Respond to identified fire emergencies.	1.1 Communicate the nature and extent of the fire emergency to team members in order to confirm required actions and responses 1.2 Apply knowledge of fire chemistry, fire characteristics and chemical hazards to assessment of the fire emergency and communicate the action required 1.3 Advise others of the nature and extent of the fire emergency from a knowledge of appropriate fire control strategies.
2. Deploy fire emergency equipment.	2.1 Utilise knowledge of the location and availability of fire fighting equipment in the control of a fire emergency 2.2 Select and utilise appropriate personal protective clothing and equipment and breathing apparatus by all team members 2.3 Apply appropriate fire fighting and containment media in a safe and co-ordinated manner, in accordance with the manufacturers' specifications and the organisation's procedures, to attack and control the fire emergency.

3. Undertake search of and rescue from affected areas.	3.1 Confirm the need to conduct the search and rescue with team leaders or other nominated personnel 3.2 Conduct systematic primary and secondary searches 3.3 Search rooms and mark in accordance with the organisation's procedures 3.4 Lead occupants to safety 3.5 Locate injured personnel and transfer them in an appropriate manner to a safe location 3.6 Minimise the risk of further injury to affected personnel by applying casualty handling techniques and handing them to the care of medical personnel once clear of threat of fire 3.7 Communicate extent of injuries and casualty numbers to other support groups and request further assistance as required.

Range of variables

Context

This competency would be applied by those persons who as a normal part of the work responsibilities and duties act as members of an emergency response team on an onshore or offshore facility.

The person undertaking this competency must be able to work alone and also within an environment which requires a high level of teamwork and interpersonal communication. A person undertaking this unit of competency should be able to respond to directives given either by emergency team leaders or other team members in order to contain and control the emergency.

This unit could be applied to any of the following installations or facilities:

- onshore/offshore rig/installation
- island based facility
- floating production platform
- onshore production, processing and/or storage facilities
- pipeline easements
- maintenance bases.
- Equipment may include:
- fire extinguishing agents and water curtains
- hoses
- mobile extinguishers
- stretchers
- personal protective clothing and equipment such as:
  - chemical protective clothing
  - distress alarms
  - structural fire protective clothing
- self contained breathing apparatus (SCBA)
- communication equipment.

Fire extinguishing media may include:

- water
- foam
- extinguishing powder
- gaseous extinguishing agents
- vapourising liquids
- other fire extinguishing substances.

On-scene hazards may include:

- smoke, darkness and heat
- electricity
- gas
- structural hazards
- structural collapse
- industrial — machinery, equipment, product
- hazardous products and materials
- unauthorised personnel.

Firefighting strategies and tactics may include:

- direct attack
- indirect attack
- combination attack
- exposure protection
- internal/offensive attacks
- confining the spread of fire
- rescuing occupants
- cooling the fuels
- removal of fuels
- interrupting the chemical chain reaction
- exclusion of oxygen.

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

Assessment context and methods

Assessment for this unit of competency will be on an operating plant. The unit will be assessed in as holistic a manner as is practical and may be integrated with the assessment of other relevant units of competency. Assessment will occur over a range of situations which will include disruptions to normal, smooth operation.

Simulation may be required to allow for timely assessment of parts of this unit of competency. Simulation should be based on the actual plant and will include walk throughs of the relevant competency components. Simulations may also include the use of case studies/scenarios and role plays.

This unit of competency requires a significant body of knowledge which will be assessed through questioning and the use of what if scenarios both on the plant (during demonstration of normal operations and walk throughs of abnormal operations) and off the plant.

Critical aspects

Competence must be demonstrated in the ability to recognise and analyse potential situations requiring action and then in implementing appropriate corrective action. The emphasis should be on the ability to minimise the effects of the critical situation.

Consistent performance should be demonstrated. In particular look for evidence of:

- ability to work effectively in a team
- recognition of fire behaviour
- impact of fire fighting tactics
- conducting fire fighting operations in accordance with the organisation's safe work practices

These aspects may be best assessed using a range of scenarios/case studies/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, unusual and extreme situations which may have been generated from the past incident history of the plant, incidents on similar plants around the world, hazard analysis activities (eg, HAZOP) and similar sources.

Resource implications

Assessment will require access to an operating plant over an extended period of time, or a suitable method of gathering evidence of operating ability over a range of situations. A bank of scenarios/case studies/what ifs will be required as will a bank of questions which will be used to probe the reasoning behind the observable actions.

Other assessment advice

In all plants it may be appropriate to assess this unit concurrently with relevant teamwork and communication units.

In a major hazard facility, it may be appropriate to assess this unit concurrently with:

- PMAOHS200 Participate in workplace safety procedures.

Essential knowledge

Knowledge and understanding of the process sufficient to recognise fire situations and then determine an action that is appropriate within operating guidelines and the scope of their responsibilities and competencies. It would be expected that a person would be able to communicate with team members the nature and extent of the fire and the actions required.

A person undertaking this competency must be able to demonstrate knowledge of:

- fire chemistry, fire characteristics and chemical hazards
- location and availability of fire fighting equipment
- appropriate personal protective clothing, equipment and breathing apparatus
- appropriate fire fighting and containment media
- casualty handling techniques.

Key competencies

1 Collect, analyse and organise information	**2** Communicate ideas and information	**3** Plan and organise activities	**4** Work with others and in teams	**5** Use mathematical ideas and techniques	**6** Solve problems	**7** Use technology
2	2	2	2	1	2	2

Unit title

PMAOHS214A Undertake helicopter safety and escape

Unit descriptor

In an emergency scenario, a person traveling by helicopter to a platform may have to exit the aircraft under abnormal conditions. This unit of competency is designed to improve the chance of an individual surviving a helicopter incident at sea through the application of thorough pre-flight preparation, the correct use of safety equipment, and appropriate helicopter safety techniques.

This unit of competency would be applied to all persons who regularly travel by helicopter to any of the following installations or facilities:

- offshore rig/installation
- floating production vessel.

In an emergency the operations technician would:

- escape from an inverted and/or submerged helicopter
- don and successfully employ a life jacket
- deploy safety and emergency equipment
- deploy life rafts.

Prerequisites

This unit **has no** prerequisites.

Element	Performance criteria
1. Prepare for flight.	1.1 Listen to and follow pre-flight instructions from pilot or boarding controller 1.2 Undertake pre-flight preparation including wearing appropriate clothing and personal safety equipment such as immersion suits and personal floatation devices (life jacket) 1.3 Check own gear for suitability including covered footwear, long trousers, and no loose items or hats 1.4 Check the supplied safety gear is fitted and worn correctly.
2. Board the helicopter	2.1 Approach helicopter as directed by the pilot or ground crew 2.2 Put on seat belt and hearing protection. 2.3 Familiarise oneself with the helicopter layout 2.4 Locate and identify all the safety equipment 2.5 Locate and identify primary and secondary exits 2.6 Listen to instructions on emergency egress from the aircraft.

Element	Performance criteria
3. Prepare for helicopter ditching.	3.1 Facilitate a controlled and safe egress from a ditched helicopter from a knowledge of helicopter layout, including the location and operation of emergency exits and equipment 3.2 Secure personal items within the cabin prior to the evacuation to facilitate escape 3.3 Check harnesses, seat belts and life jackets to ensure that they are properly fastened and secured prior to the ditching in order to minimise personal injury or gear failure 3.4 Adopt the required brace position in order to allow for proper positioning prior to ditching 3.5 Acknowledge and respond to information communicated by the helicopter crew advising the nature and extent of the situation.
4. Undertake evacuation from the helicopter.	4.1 Identify appropriate primary and secondary escape routes in order to determine the locations through which the evacuation will be undertaken 4.2 Wait until rotors have stopped turning and all movement has ceased 4.3 Undo, in a controlled sequential manner seat belts and harnesses to facilitate exit from the helicopter 4.4 Deploy available safety equipment as instructed in order to assist the individual's sea survival after evacuation has been safely completed 4.5 Acknowledge and respond to information communicated by the helicopter crew advising the nature and extent of the situation.
5. Facilitate recovery process.	5.1 Deploy position indicating devices and use appropriate signalling devices to facilitate the location of personnel by air-sea rescue group 5.2 Use emergency supplies and equipment to ensure that available supplies are maximised and are able to meet the nature and extent of the emergency 5.3 Apply appropriate helicopter/vessel rescue techniques to the recovery process.

Element	Performance criteria
6. Control hazards.	6.1 Identify and act upon potential hazards to minimise injury to personnel or damage to equipment 6.2 Manage use of life raft by applying a knowledge of life raft operation and requirements 6.3 Apply suitable swimming techniques (whilst wearing life jacket) in the water in order to aid movement and boarding of the deployed life raft 6.4 Rescue and recover persons in the water, minimising further potential for injury through the appropriate raft boarding and righting techniques. 6.5 Employ suitable techniques, both in the life raft and in the water, in order to delay the onset of hypothermia 6.6 Assess and treat hypothermia as required.

Range of variables

Context

This unit of competency includes all such items of equipment and unit operations which form part of the helicopter escape system. For your circumstances this may include:

- helicopter simulators
- beacons
- life rafts
- distress flares
- life jackets
- EPIRB.

Typical problems for your situation may include:

- jammed or damaged survival equipment
- personal injury or injury to others
- trapped personnel
- loose or damaged equipment
- adverse weather conditions.

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.

Assessment context and methods

Assessment for this unit of competency will involve a helicopter simulator. The unit will be assessed in as holistic a manner as is practical and may be integrated with the assessment of other relevant units of competency. Assessment will occur over a range of situations.

Simulation should be based on actual helicopter ditchings and will include walk throughs of the relevant competency components. Simulations may also include the use of case studies/scenarios, role plays and 3D virtual reality interactive systems. In the case of evacuation training or training for competencies practised in life threatening situations, simulation may be used for the bulk of the training.

This unit of competency requires an application of the knowledge contained in the use of the aircraft's survival systems and their integral equipment, to the level needed to maintain control and recognise and resolve problems. This can be assessed through questioning and the use of what if scenarios both on the facility (during demonstration of normal operations and walk throughs of abnormal operations) and off the plant.

Critical aspects

Competence must be demonstrated in the ability to safely get out of the helicopter following an incident at sea.

Resource implications

Assessment will require access to a suitable helicopter simulator. A bank of scenarios/case studies/what ifs will be required as will a bank of questions which will be used to probe the reasoning behind the observable actions.

Other assessment advice

It may be appropriate to assess this unit concurrently with relevant teamwork and communication units and also:

- PMAOHS215 Apply offshore facility abandonment and sea survival procedures and practices.

Essential knowledge

The knowledge referred to in the evidence guide for this unit includes:

- helicopter escape techniques
- integral equipment functions to the level needed to act rationally and recognise and resolve problems
- hazards boarding and departing from helicopters under normal and emergency situations
- inverted and submerged helicopter escape techniques
- life jacket operation
- emergency equipment deployment techniques
- life raft operation and deployment
- rescue and recovery techniques
- hypothermia prevention and reduction techniques (delaying and offsetting).

Key competencies

1 Collect, analyse and organise information	**2** Communicate ideas and information	**3** Plan and organise activities	**4** Work with others and in teams	**5** Use mathematical ideas and techniques	**6** Solve problems	**7** Use technology
1	1	1	1	1	2	1

Unit title

PMAOHS215A Apply offshore facility abandonment and sea survival procedures and practices.

Unit descriptor

In an emergency scenario personnel on an off-shore facility may be required to abandon his/her station due to an on-site emergency and then survive at sea. This unit of competency is designed to allow persons to improve their chances of survival through the application of agreed sea survival techniques and strategies following abandonment of the facility.

Offshore facilities may include:

- offshore rig or platform
- floating production vessel.

Personnel may be required to select and deploy the appropriate safety equipment, launch available sea-going survival craft, assist in the survival of other persons, and activate location beacons or homing devices.

Generally the operations technician would be part of a team. They would be expected to be capable of performing all facets of the competency whilst following site specific procedures. At all times they would be liaising and communicating with relevant team members.

Prerequisites

This unit **has no** prerequisites.

Element	Performance criteria
1. Prepare for abandonment of the offshore facility.	1.1 Acknowledge alarm systems and proceed to muster and/or evacuation area as appropriate 1.2 Make evacuation area safe to ensure likelihood of personal injury or equipment damage is minimised 1.3 Select and apply appropriate personal flotation device (life jacket) and other equipment 1.4 Prepare for evacuation by applying appropriate methods and means of evacuation.
2. Abandon the offshore facility.	2.1 Deploy safety/rescue equipment in a safe and controlled manner before commencing abandonment. 2.2 Abandon the facility in accordance with relevant safety requirements and procedures 2.3 Enter life raft or other survival craft appropriately 2.4 Depart promptly from the facility using agreed techniques and in a safe and controlled manner. 2.5 Utilise appropriate safe water entry procedures.

3. Manage the survival process.	3.1 Identify and act upon potential hazards to minimise injury to personnel or damage to equipment 3.2 Manage use of life raft by applying a knowledge of life raft operation and requirements 3.3 Apply suitable swimming techniques (whilst wearing life jacket) in the water in order to aid movement and boarding of the deployed life raft 3.4 Rescue and recover persons in the water, minimising further potential for injury through the appropriate raft boarding and righting techniques 3.5 Employ suitable techniques, both in the life raft (or other survival craft) and in the water, in order to delay the onset of hypothermia 3.6 Assess and treat hypothermia as required.
4. Facilitate the recovery process.	4.1 Deploy position indicating devices and use appropriate signaling devices to facilitate the location of personnel by air-sea rescue group 4.2 Use emergency supplies and equipment to ensure that available supplies are maximised and are able to meet the nature and extent of the emergency 4.3 Apply appropriate helicopter/vessel rescue techniques to the recovery process.
5. Control hazards.	5.1 Identify hazards relevant to the abandonment process 5.2 Assess the risks arising from those hazards 5.3 Implement measures to control those risks in line with procedures and duty of care.

Range of variables

Context

This unit of competency includes all such items of equipment and unit operations which form part of the survival process. For your situation this may include:

- life rafts and life raft deployment devices
- emergency descent devices
- position indicating devices
- signalling devices
- scramble nets and ladders
- helicopter lifting strops
- rescue harnesses.

Typical problems might include:

- failure of safety equipment
- interaction with heat or debris
- prolonged exposure to the elements
- risk of hypothermia.

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

Assessment context and methods

Assessment for this unit of competency will involve an abandonment simulation. The unit will be assessed in as holistic a manner as is practical and may be integrated with the assessment of other relevant units of competency. Assessment will occur over a range of situations, which will include disruptions to normal, smooth operation.

Simulation should be based on an actual abandonment and will include walk throughs of the relevant competency components. Simulations may also include the use of case studies/scenarios, role plays and 3D virtual reality interactive systems. In the case of evacuation training or training for competencies practised in life threatening situations, simulation may be used for the bulk of the training.

This unit of competency requires an application of the knowledge contained in the use of survival equipment, to the level needed to maintain control and recognise and resolve problems. This can be assessed through questioning and the use of what if scenarios both on the plant (during demonstration of normal operations and walk throughs of abnormal operations) and off the plant.

Critical aspects

The critical aspect of this competence is the preservation of life under adverse circumstances. Competence must be demonstrated in the ability to assist or to safely get oneself and others off an off-shore facility following an incident at sea and to survive in the water.

Resource implications

As a general rule assessment will require access to an appropriate emergency evacuation training facility which has the capacity to gather evidence of operating competence over a range of situations. A bank of scenarios/case studies/what ifs will be required as will a bank of questions which will be used to probe the reasoning behind the observable actions.

Essential knowledge

The knowledge referred to in the evidence guide for this unit includes:

- offshore facility abandonment procedures
- safe water entry procedures
- life jacket operation
- correct life raft and other survival craft deployment
- life raft operation and management
- boarding and righting a life raft
- safety and emergency equipment deployment techniques
- safety and emergency equipment operation

- use of life-jackets
- hypothermia prevention and reduction techniques (delaying and offsetting)
- rescue and recovery techniques.

Competence also includes the ability to and be able to distinguish between causes of problems/alarms/fault indications such as:

- delayed deployment of survival craft
- life jacket malfunctions or failures
- failure of life craft to deploy correctly
- inability of life raft to right itself after overturning
- safety equipment malfunctions
- individual and group hypothermia.

Key competencies

1 Collect, analyse and organise information	**2** Communicate ideas and information	**3** Plan and organise activities	**4** Work with others and in teams	**5** Use mathematical ideas and techniques	**6** Solve problems	**7** Use technology
1	1	1	2	1	2	1

Unit title

PMAOHS216B Operate breathing apparatus

Unit descriptor

This unit covers competence associated with the operation and maintenance of breathing apparatus equipment in an irrespirable atmosphere.

This unit is the same as *PUAFIR207A Operate breathing apparatus open circuit*, except for the prerequisites, which are not required in the chemical, hydrocarbons and oil refining context.

Prerequisites

This unit **has no** prerequisites.

Element	Performance criteria
1. Conduct pre-donning checks and tests on breathing apparatus.	1.1 Inspected breathing apparatus for immediate use in accordance with procedures 1.2 Report/record faulty or damaged equipment in accordance with procedures.
2. Operate breathing apparatus.	2.1 Identify, monitor and control hazards in accordance with the procedures 2.2 Establish and maintain communication with appropriate personnel throughout the activity 2.3 Demonstrate effective application of breathing apparatus, undertaking activities as a member of a team, in accordance with procedures 2.4 Implement entrapment procedures in accordance with procedures 2.5 Maintain personal safety at all times.
3. Conclude operations.	3.1 Close down breathing apparatus set in accordance with procedures 3.2 Remove breathing apparatus set in accordance with procedures 3.3 Undertake after use cleaning and maintenance of breathing apparatus in accordance with procedures 3.4 Make equipment ready for operational use in accordance with procedures.

Range of variables

Types of breathing apparatus include:

- open circuit
- airline equipment

Types of irrespirable atmospheres include:

- heated atmospheres
- asphyxiating atmosphere (oxygen deficient)

- (non-skin absorption) toxic or poisonous atmosphere
- smoke or suspended particles/fibres in atmosphere.

Pre-use tests and checks must include:

- serviceability of components
- integrity of components
- cylinder pressure
- integrity of air flow system
- ancillary equipment.

Breathing apparatus control equipment include:

- control boards
- breathing apparatus set tallies
- entry control officer identification
- guideline and branch line tallies
- procedures
- personal lines.

Breathing apparatus control include:

- principles of BA Control
- organisation's procedures
- Stage 1 (one entry point)
- Stage 2 (multiple entry points)
- entry/exit control point
- entry/exit control officer
- timing device.

Entrapment procedures include:

- cease all strenuous activity
- activate the distress signal unit
- remain calm
- relocate to safest available place
- call for assistance.

Communications include:

- distress signal unit
- portable radio.
- communications sets
- signal lines
- hand signals.

Hazards include:

- fire
- failure to maintain a face seal
- exhaustion of air supply
- malfunction of equipment
- disorientation in smoke/darkness or confinement
- structural hazards and/or hazardous materials
- entrapment.

Evidence guide

Critical aspects of evidence

It is essential for this unit that competence be demonstrated in accordance with AS/NZ 17151716:

- appropriate conduct of pre-donning tests
- correct donning of breathing apparatus
- operation of breathing apparatus
- movement in conditions or reduced visibility
- breathing apparatus emergency procedures
- organisation's procedures are followed
- correct removal of breathing apparatus
- return of breathing apparatus to operational status.

Interdependent assessment of units

Pre-requisite units:

- Nil

Co-requisite units:

- Nil

Underpinning knowledge

- respiratory system, effects of irrespirable atmospheres on the body, protective equipment
- characteristics, component parts, operation of compressed air breathing apparatus
- operational testing, standard operating procedures and safe work practices when wearing breathing apparatus
- operating breathing apparatus
- use of the distress signal unit
- use of the breathing apparatus control equipment
- use of procedures, personal lines and tallies.

Underpinning skills

Inspecting, donning, operating in, removal, cleaning, maintaining and returning to operational status of breathing apparatus.

Resource implications

- access to a range of controlled or simulated scenarios
- breathing apparatus and associated equipment.

Consistency of performance

Evidence should be gathered over a period of time in a range of actual or simulated workplace environments.

Context of assessment

A combination of oral or written presentations, observations, on the job and/or in a range of simulated environments.

Key competencies

1 Collect, analyse and organise information	**2** Communicate ideas and information	**3** Plan and organise activities	**4** Work with others and in teams	**5** Use mathematical ideas and techniques	**6** Solve problems	**7** Use technology
1	1	1	2	1	2	1

Unit title

PMAOHS220A Provide initial first aid response

Unit descriptor

This competency unit deals with the provision of essential first aid in recognising and responding to an emergency using basic life support measures. The first aider is not expected to deal with complex casualties or incidents, but to provide an initial response where first aid is required. In this unit it is assumed the first aider works under supervision, either individually or as part of a team, and/or according to established workplace first aid procedures and policies.

Prerequisites

This unit **has no** prerequisites.

Element	Performance criteria
1. Assess the situation.	1.1 Identify physical hazards to personal and others' health and safety 1.2 Minimise immediate risk of hazard to self and casualty's health and safety in accordance with OHS requirements 1.3 Assess the casualty's vital signs and physical condition in accordance with workplace procedures.
2. Apply basic first aid techniques.	2.1 Provide first aid management in accordance with established first aid procedures 2.2 Reassure and make casualty comfortable in a caring and calm manner using available resources 2.3 Seek first aid assistance from others in a timely manner and as appropriate 2.4 Monitor and respond to casualty's condition in accordance with effective first aid principles and workplace procedures 2.5 Accurately record details of casualty's physical condition, changes in conditions, management and response to management in line with organisational procedures 2.6 Finalise casualty management details according to casualty's needs and first aid principles.
3. Communicate details of the incident.	3.1 Request medical assistance using relevant communication media and equipment 3.2 Accurately convey details of casualty's condition and management activities to emergency services/relieving personnel 3.3 Prepare reports to supervisors in a timely manner, presenting all relevant facts according to established company procedures.

Range of variables

Context

First aid management will need to account for:

- workplace policies and procedures
- industry/site specific regulations, codes, etc
- occupational health and safety requirements
- state and territory workplace health and safety requirements
- allergies the casualty may have.

Physical hazards may include:

- workplace hazards
- environmental hazards
- proximity of other people
- hazards associated with the casualty management process.

Risks may include:

- worksite equipment, machinery and substances
- environmental risks
- bodily fluids
- risk of further injury to the casualty
- risks associated with the proximity of other workers and bystanders.

Casualty's condition is managed for:

- abdominal injuries
- allergic reactions
- bleeding
- burns — thermal, chemical, friction, electrical
- cardiac conditions
- chemical contamination
- cold injuries
- crush injuries
- dislocations
- drowning
- envenomation — snake, spider, insect and marine bites
- environmental conditions such as hypothermia, dehydration, heat stroke
- epilepsy, diabetes, asthma and other medical conditions
- eye injuries
- fractures
- head injuries
- minor skin injuries
- neck and spinal injuries
- needle stick injuries
- poisoning and toxic substances
- respiratory management of asthma and/or choking
- shock
- smoke inhalation
- soft tissue injuries including sprains, strains, dislocations
- substance abuse, including drugs
- unconsciousness including not breathing and no pulse.

First aid management will need to account for:

- location and nature of the workplace

- the environmental conditions eg, electricity, biological risks, weather, motor vehicle accidents
- location of emergency service personnel
- the use and availability of first aid equipment and resources
- infection control.

Medication may include:

- asthma — aerosol bronchodilators: casualty's own or from first aid kit in accordance with State and Territory legislation
- severe allergic reactions — adrenaline: subject to casualty's own regime.

Resources and equipment are used appropriate to the risk to be met and may include:

- defibrillation units
- pressure bandages
- thermometers
- first aid kits
- eyewash
- thermal blankets
- pocket face masks
- rubber gloves
- dressing
- spacer device
- cervical collars.

Communication systems may include but not be limited to:

- mobile phones
- satellite phones
- HF/VHF radio
- flags
- flares
- two way radio
- email
- electronic equipment.

Vital signs include:

- breathing
- circulation
- consciousness.

Established first aid principles include:

- checking the site for danger to self, casualty and others and minimising the danger
- checking and maintaining the casualty's airway, breathing and circulation.

Evidence guide

Assessment context and methods

Assessment for this unit of competency will be on an operating plant. The unit will be assessed in as holistic a manner as is practical and may be integrated with the assessment of other relevant units of competency.

Assessment will occur over a range of situations which will include disruptions to normal, smooth operation.

Where applicable, assessment should replicate workplace conditions as far as possible. Where, for reasons of safety, access to equipment and resources and space, assessment takes place away from the workplace, simulations should be used to represent workplace conditions as closely as possible. Consistency of performance should be maintained over the required range of workplace situations until renewal of competence/licence is required by the industry/organisation.

Critical aspects

Competence may be demonstrated working individually, under supervision or as part of a first aid team.

Resource implications

Assessment will require access to an operating plant over an extended period of time, or a suitable method of gathering evidence of operating ability over a range of situations. A bank of scenarios/case studies/what ifs will be required as will a bank of questions which will be used to probe the reasoning behind the observable actions.

Other assessment advice

In all plants it may be appropriate to assess this unit concurrently with relevant teamwork and communication units.

In a major hazard facility, it may be appropriate to assess this unit concurrently with:

- PMAOHS200 Participate in workplace safety procedures
- PMASUP220 Monitor and control environmental hazards.

Essential knowledge

Knowledge and understanding of basic life support measures sufficient to provide an initial response where first aid is required within the scope of their responsibilities and competencies.

The following knowledge should be demonstrated in assessment:

- basic anatomy and physiology
- company standard operating procedures (SOPs)
- legal responsibilities and duty of care
- dealing with confidentiality
- knowledge of the first aiders' skills and limitations
- occupational health and safety legislation and regulations
- how to gain access to and interpret materials safety data sheets (MSDSs).
- Evidence should demonstrate the following skills:
- resuscitation

- demonstration of first aid casualty management principles — assessing and minimising danger, maintaining the casualty's airway, breathing and circulation
- safe manual handling of casualty
- consideration of the welfare of the casualty
- report preparation
- communication skills
- ability to interpret and use listed documents.
- Underpinning knowledge and skills
- basic anatomy and physiology
- duty of care
- resuscitation
- bleeding control
- care of unconscious
- infection control
- airway management
- state and territory regulatory requirements relating to currency of skill and knowledge
- decision making
- legal requirements
- assertiveness skills
- communication skills.

Key competencies

1 Collect, analyse and organise information	**2** Communicate ideas and information	**3** Plan and organise activities	**4** Work with others and in teams	**5** Use mathematical ideas and techniques	**6** Solve problems	**7** Use technology
2	2	2	2	2	2	2

Unit title

PMAOHS221A Maintain first aid supplies and records

Unit descriptor

This competency unit deals with the responsibilities in ensuring that adequate supplies of first aid equipment and resources, and records, are maintained. The person may or may not necessarily be responsible for the ordering and purchasing of equipment and resources, depending upon the workplace organisational structure.

Prerequisites

This unit **has no** prerequisites.

Element	Performance criteria
1. Maintain resources.	1.1 Ensure and secure, availability of adequate and relevant resources in accordance with workplace procedures 1.2 Identify and obtain non consumables required by workplace to maintain adequate readiness of supplies 1.3 Identify and obtain consumables required by workplace to maintain adequate readiness of supplies 1.4 Check stock and regularly carry out inspection of equipment for condition and currency 1.5 Recover and clean equipment and dispose of waste safely according to legislative and site procedures 1.6 Maintain resources in operational readiness in accordance with workplace procedures 1.7 Store resources in correct manner to ensure their future operation and serviceability.
2. Record and manage records.	2.1 Complete relevant forms as required according to legislation and site procedures 2.2 Store forms in accordance with legislative and site procedures 2.3 Send relevant forms to appropriate bodies, file records appropriately and undertake security of such records according to workplace and legislative requirements 2.4 Maintain confidentiality of records and information in accordance with privacy principles and statutory and/or organisational policies.

Range of variables

Context

First aid resources may include but not be limited to:

Non consumables

- machines
- books
- reference materials
- MSDS resources including Workplace Health & Safety Act
- legislative regulations
- stretchers
- communication systems
- relevant texts
- equipment.

Consumables

- first aid kits (bandages, tape, scissors, splinter removers, antiseptic, eye management, disinfectants, emergency numbers and contacts, etc)
- dressings
- ointments
- cold packs
- analgesics
- splints
- sharps disposal
- biohazardous waste
- medical grade oxygen
- bandages
- medication
- personal protection equipment
- eye wash
- disinfectants
- broncho-dialators
- cervical collars.

Legislation may include but not be limited to:

- occupational health and safety legislation
- regulations and codes of practice
- industrial relations legislation
- environmental legislation.

Codes of practice may include, but not be limited to:

- industry codes
- industry standards

- company procedures
- state and territory health and safety authorities.

Relevant forms may include, but not limited to:

- incident/injury forms
- casualty history forms
- disease notification
- workcover forms
- medication registers
- workers' compensation
- day book
- pre participation records (sport)
- medical histories
- management records
- stock records
- infection control records
- training records.

Policies and procedures may be from organisations such as:

- Australian Resuscitation Council (ARC)
- National Health and Medical Research Council (NHMRC)
- company standard operating procedures (SOPs)
- Australian Standards
- Worksafe Australia.

Evidence guide

Assessment context and methods

Assessment for this unit of competency will be on an operating plant. The unit will be assessed in as holistic a manner as is practical and may be integrated with the assessment of other relevant units of competency.

Assessment will occur over a range of situations that will include disruptions to normal, smooth operation.

Where applicable, assessment should replicate workplace conditions as far as possible. Where, for reasons of safety, access to equipment and resources and space, assessment takes place away from the workplace, simulations should be used to represent workplace conditions as closely as possible.

Critical aspects

Competence may be demonstrated working individually, under supervision or as part of a first aid team.

Resource implications

Assessment will require access to an operating plant over an extended period of time, or a suitable method of gathering evidence of operating ability over a range of situations.

A bank of scenarios/case studies/what ifs will be required as will a bank of questions which will be used to probe the reasoning behind the observable actions.

Other assessment advice

In all plants it may be appropriate to assess this unit concurrently with relevant technical units.

Competence may be assessed in conjunction with other industry units of competency such as:

- record management
- stock control
- administration
- office procedures.

Essential knowledge

Knowledge and understanding of the materials and equipment required sufficient to recognise variance from requirements and then determine an appropriate action within the scope of their responsibilities and competencies. Knowledge of the enterprise's procedures and relevant regulatory requirements along with the ability to implement them within appropriate time constraints and work standards.

Underpinning knowledge and skills:

- occupational health and safety legislation and regulations
- legal responsibilities and duty of care
- policies and procedures
- cleaning agents
- stock control
- waste disposal
- transportation techniques
- use of referral networks
- currency of skills and knowledge
- gaining access to materials safety data sheets (MSDSs).

Key competencies

1 Collect, analyse and organise information	**2** Communicate ideas and information	**3** Plan and organise activities	**4** Work with others and in teams	**5** Use mathematical ideas and techniques	**6** Solve problems	**7** Use technology
2	2	2	2	1	2	1

Unit title

PMAOMIR205A Control minor incidents

Unit descriptor

The person may be called upon to control small incidents in the workplace. These could include occurrences such as:

- fires of the A,B,C,D,E and F classes
- fuel and other spills
- process overheating
- equipment failure

This unit does NOT apply to major incidents (see PMAOHS210A Control non-fire incidents and PMAOHS212A Control fire incidents).

The person would:

- safely use first response equipment and co-ordinate with other actions
- operate incident equipment
- report the use of incident equipment
- mark or position incident equipment to indicate that it has been used and requires servicing

Generally the person would be part of a team during an incident response. However, he/she may be required to take independent action. At all times they would be liaising and cooperating with other members of the team.

This competency would be possessed generally by most/all operations personnel and some non-operations personnel. It would require training in addition to that which might typically be part of an induction program, but does not require specialist training such as is given to members of an incident response team. The general purpose of this initial response is to prevent any incident from escalating. In the event of an incident this person may be expected to respond to an incident team member in line with procedures.

Prerequisites

This unit **has no** prerequisites.

Element	Performance criteria
1. Evaluate the incident	1.1 Recognise an incident has occurred or is about to occur 1.2 Assess the incident for type of response and the likely effectiveness of first response action 1.3 Identify the hazards arising from the incident 1.4 Raise the alarm and seek assistance as required 1.5 Select appropriate response to control incident 1.6 Determine hazard control measures to be employed 1.7 Recommend evacuation if appropriate.
2. Control the incident.	2.1 Maintain personal safety at all times 2.2 Confine the incident to the area of origin where possible 2.3 Select appropriate equipment to control incident 2.4 Use equipment in accordance with procedures 2.5 Clear and secure the incident area 2.6 Monitor the incident and surrounding conditions and modify response as appropriate 2.7 Handover to specialist incident response personnel as appropriate
3. Conclude the incident control	3.1 Report the use of equipment according to procedures 3.2 Mark or position incident control equipment after use to indicate it requires servicing or replacing 3.3 Participate in incident debrief and reporting in accordance with procedures

Range of variables

Context

This unit of competency includes all such items of equipment and workplace operations which form part of the incident response system. For your work environment this may include (select relevant items):

- fire doors
- fire sprinkler systems
- fire alarm systems
- first-aid kits
- fire extinguishers
- hose reels
- smoke vents
- spill control kits

Typical problems for your work environment may include:

- determining the nature and size of the incident
- predicting the incident's likely development
- lack of support in an incident
- inappropriate or lack of a means of escape
- lack of availability of control equipment or facilities

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.

Relationship to Major Hazard Facility Legislation

Organisations within the Chemical, Hydrocarbons and Oil Refining industries may find themselves falling under the provisions of various Major Hazard Facilities legislation. In developing this unit consideration has been given to the requirements of Sections 8 and 9 of the National Standard For The Control Of Major Hazard Facilities [NOHSC:1014(2002)] and the National Code Of Practice For The Control Of Major Hazard Facilities [NOHSC:2016(1996)].

This unit will assist individuals to meet some of their obligations under the relevant State or Territory legislation. Responsibility for appropriate contextualisation and application of the unit to ensure compliance however, remains with the individual organisation.

Evidence guide

Assessment context and methods

Assessment for this unit of competency will be by way of simulation or under incident conditions. The unit will be assessed in as holistic a manner as is practical and may be integrated with the assessment of other relevant units of competency. Assessment will occur over a range of situations which can include a variety of incident circumstances.

Simulations must, as closely as possible, approximate actual incident conditions and should be based on the actual facility. Assessments should include ‘walk throughs’ of the relevant competency components and may include the use of case studies/scenarios and role plays.

This unit of competency requires a significant body of knowledge which will be assessed through questioning and the use of ‘what if’ scenarios both in the facility (during demonstration of normal operations and walk throughs of abnormal operations) and off the site.

Critical aspects

Competence must be demonstrated in the ability to correctly respond to incident situations and in implementing appropriate action. The emphasis should be on the ability to stay ahead of the problem rather than to have to take drastic action in order to recover the situation. In particular look to see that:

- the incident is evaluated appropriately
- an appropriate response to the incident, and where appropriate response equipment, is selected
- the safety of persons is given the highest priority
- actions taken are effective and do not cause escalation or other incidents
- all reporting is completed in accordance with procedures

These assessment activities should include a range of problems, including new, unusual and improbable situations which may have been generated from past workplace incident history, incidents in similar workplaces around the world, hazard analysis activities and/or similar sources.

Resource implications

Assessment will require (1) access to an accurately simulated environment in the absence of an on-site incident environment, or (2) a suitable method of gathering evidence of responding ability over a range of situations. A bank of scenarios/case studies/what ifs will be required as will a bank of questions which will be used to probe the reasoning behind the observable actions.

Other assessment advice

In all workplace environments it may be appropriate to assess this unit concurrently with other relevant units.

Essential knowledge

The knowledge referred to in the evidence guide for this unit includes:

- classification of fires and incidents
- limitations of first response equipment
- situations that must not be responded to because of the risk to life
- the hazards involved with first response action
- understanding relevant workplace procedures
- selecting appropriate first response equipment
- understanding the theory of fire and other relevant incidents

Competence also includes the ability to isolate the causes of problems within the incident response system and to be able to distinguish between causes of problems indicated by:

- damage to first response equipment
- exceeding the limitations of use of incident control equipment or facilities
- inappropriate actions when first response action is undertaken
- inadequacies in facilities that may be used to confine emergencies
- inappropriately identifying the type of incident
- the incorrect use of equipment

Key competencies

1 Collect, analyse and organise information	**2** Communicate ideas and information	**3** Plan and organise activities	**4** Work with others and in teams	**5** Use mathematical ideas and techniques	**6** Solve problems	**7** Use technology
1	1	2	2	1	2	1

Unit title

PMAOMIR210A Control evacuation to muster point

Unit descriptor

This unit of competence applies to a person who is required to control the evacuation of personnel from the workplace to a muster point. This includes evacuation to an assembly/muster point, moving mobility/sensory impaired people including persons with either temporary or permanent sensory impairment and casualties, or others who require assistance during an evacuation. Contributing circumstances might include:

- fire or smoke spread
- hazardous releases – loss of containment
- earthquakes, severe storm damage, cyclones, floods and other nature and human-made disasters

The individual would:

- control the evacuation
- conduct head counts
- instigate checks for missing persons
- relocate evacuated persons to other areas

Generally the person would be part of a team during the incident but may be required to act independently. At all times they would be liaising and cooperating with other members of the team.

This unit incorporates features from *145/01 React safely in emergency situations (level one), 145/06 Safeguard endangered persons (level three), 145/11 Co-ordinate actions to safeguard endangered persons (level four)* and has been merged with Draft *1 PMAOMIR006 Assist in workplace evacuation*. It was previously titled *Coordinate workplace evacuation*.

Prerequisites

This unit **has no** prerequisites.

Element	Performance criteria
1. Prepare to evacuate	1.1 Recognise alarm or other signs of incident 1.2 Determine nature and location of incident, wind direction and other relevant information 1.3 Assess incident situation and instigate relevant procedure 1.4 Predict probable changes/escalation to incident 1.5 Prepare the area and personnel for evacuation 1.6 Facilitate incident roles and the operation of incident response stations according to procedures 1.7 Coordinate incident response actions according to procedures 1.8 Maintain communication channels with relevant personnel

Element	Performance criteria
2. Control evacuation	2.1 Identify hazards associated with evacuation 2.2 Identify and communicate most appropriate path for evacuation to the desired muster point 2.3 Implement relevant hazard control procedures 2.4 Initiate evacuation when appropriate 2.5 Ensure evacuation of mobility/sensory-impaired people 2.6 Control incident evacuation according to procedures 2.7 Undertake roll call of evacuated persons 2.8 Communicate required details of evacuation to relevant personnel.
3. Complete evacuation.	3.1 Arrange and coordinate the first aid, welfare and other needs of evacuated persons 3.2 Maintain control over evacuees 3.3 Arrange for/provide assistance to the incident controller as required 3.4 Maintain communication channels with relevant personnel 3.5 Move evacuees to a new location, or dismiss and return to work as appropriate 3.6 Debrief evacuees and seek possible improvements 3.7 Complete all required records and reporting 3.8 Arrange for suggested improvements to be incorporated into procedures as appropriate

Range of variables

Context

This unit of competency includes all such items of equipment and workplace operations which form part of the incident response system which is relevant to evacuations. For your work environment this may include (select relevant items):

- hard hats
- armbands
- torches
- smoke hoods
- lifejackets
- incident communications equipment
- check lists and floor plans

Typical hazards for your work environment may include:

- spread of fire
- threat to adjoining areas
- danger of explosion
- loss of communications
- falling or shifting debris
- obstruction of evacuation routes

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.

Relationship to Major Hazard Facility Legislation

Organisations within the Chemical, Hydrocarbons and Oil Refining industries may find themselves falling under the provisions of various Major Hazard Facilities legislation. In developing this unit consideration has been given to the requirements of Sections 8 and 9 of the National Standard For The Control Of Major Hazard Facilities [NOHSC:1014(2002)] and the National Code Of Practice For The Control Of Major Hazard Facilities [NOHSC:2016(1996)].

This unit will assist individuals to meet some of their obligations under the relevant State or Territory legislation. Responsibility for appropriate contextualisation and application of the unit to ensure compliance however, remains with the individual organisation.

Evidence guide

Assessment context and methods

Assessment for this unit of competency will be by way of simulation or under incident conditions. The unit will be assessed in as holistic a manner as is practical and may be integrated with the assessment of other relevant units of competency. Assessment will occur over a range of situations which can include a variety of incident circumstances.

Simulations must, as closely as possible, approximate actual incident conditions and should be based on the actual facility. Assessments should include 'walk throughs' of the relevant competency components and may include the use of case studies/scenarios and role plays.

This unit of competency requires a significant body of knowledge which will be assessed through questioning and the use of 'what if' scenarios both in the facility (during demonstration of normal operations and walk throughs of abnormal operations) and off the site.

Critical aspects

Competence must be demonstrated in the ability to correctly respond to incident situations and in implementing appropriate action. The emphasis should be on the ability to stay ahead of the problem rather than to have to take drastic action in order to recover the situation. In particular look to see that:

- incident responses are in accordance with company procedures
- correct incident response equipment (where required) is used appropriately
- the safety and/or successful recovery of the individual and others affected by the incident response is afforded priority in the actions taken
- actions taken do not inhibit incident response effectiveness or further contribute to the incident
- appropriate documentation including reports, journal entries, logs and/or clearances are completed in accordance with procedures

These aspects may be best assessed using a range of scenarios/case studies/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, unusual and improbable 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.

Resource implications

Assessment will require (1) access to an accurately simulated environment in the absence of an on-site incident environment, or (2) a suitable method of gathering evidence of responding ability over a range of situations. A bank of scenarios/case studies/what ifs will be required as will a bank of questions which will be used to probe the reasoning behind the observable actions.

Other assessment advice

In all workplace environments it may be appropriate to assess this unit concurrently with other relevant units.

Essential knowledge

The knowledge referred to in the evidence guide for this unit includes:

- incident response reports or signals
- hazards and precautions to be taken during incidents
- actions to take in response to developing situations
- accounting procedures and analysis of reports from evacuation areas
- miscellaneous incident activities

Competence also includes the ability to isolate the causes of hazards within the incident response system and to be able to distinguish between causes of hazards indicated by:

- misunderstandings concerning coordination and communication methods
- failure to liaise with emergency services
- lack of timeliness in reporting unsatisfactory outcomes
- failure to carefully check evacuated areas
- incident assessment, response and co-ordination
- inability to apply incident procedures

Key competencies

1 Collect, analyse and organise information	**2** Communicate ideas and information	**3** Plan and organise activities	**4** Work with others and in teams	**5** Use mathematical ideas and techniques	**6** Solve problems	**7** Use technology
2	1	2	2	1	2	1

Unit title

PMAOMIR217A Gas test atmospheres

Unit descriptor

In a typical scenario an individual may be required to carry out gas testing of an atmosphere prior to entering a specific area or workspace. The competency requires the person to interpret readings and take actions based on the interpretation.

This unit is modeled on the Public Safety unit PUAFIR307A Monitor hazardous atmospheres, but does not have the prerequisites, which are not required in the chemical, hydrocarbons and oil refining context. The unit is more focused on the needs of that sector and has some wording changes.

Prerequisites

This unit **has no** prerequisites.

Element	Performance criteria
1. Prepare for gas testing.	1.1 Determine type of gas/atmosphere to be tested 1.2 Select and calibrate equipment in accordance with procedures 1.3 Determine gas testing regime/sampling pattern required 1.4 Identify hazards from possible atmosphere contaminants 1.5 Implement hazard control measures, including use of appropriate personal protective equipment.
2. Test gas.	2.1 Use gas testing equipment to test gas as required 2.2 Interpret and report readings 2.3 Monitor gas on an ongoing basis as required 2.4Take required action(s) if readings are unacceptable..
3. Maintain equipment.	3.1 Clean and maintain gas testing equipment in accordance with procedures 3.2 Inspect and fault find monitoring equipment in accordance with procedures 3.3 Return gas testing equipment to required location and in required condition 3.4 Maintain records of tests and results in accordance with procedures.

Range of variables

Working environment may be hazardous, unpredictable, subject to time pressure, chaotic and expose responders to risk, on land or water, by day or night.

Safety information and procedures must include relevant legislation, Australian Standards, codes of practice, manufacturer's instructions and organisational procedures.

Procedures include
- safe working
- permit entry plan
- testing procedures
- risk management
- measurement

Situations include
- confined spaces
- enclosed and partially enclosed spaces.
- storage tanks, silos, pits, pipes, shafts, ducts, transport vehicles and ships
- testing as part of issuing a work permit
- monitoring as part of working under a work permit
- open areas
- holding the gas tester by hand
- lowering the gas tester into a space, eg on a line

Equipment includes portable instruments, radiation detectors, sampling tubes and pumps, oxygen level meter, carbon monoxide detector and combustible gas detectors.

Workplace atmospheres may
- include visible and invisible hazards
- include hazardous surfaces
- range from safe to unsafe.

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

Critical aspects of evidence

It is essential in this unit that competence be demonstrated in:
- applying personal safety principles
- interpreting atmospheric conditions using atmospheric monitoring equipment
- recommending appropriate action
- maintaining monitoring equipment.

Essential knowledge

As may be relevant to the plant/site/process, knowledge of the following may be required:

- common chemical asphyxiants including: hydrocarbons, carbon dioxide, carbon monoxide, hydrogen cyanide, and hydrogen sulphide
- common irritants and corrosives including: chlorine, ammonia and acid bases
- common flammable gases including: acetylene, petroleum, methane, ethane, propane and butane
- narcotics
- (explosive range, upper and lower explosive limits)
- exposure standards (time weighted average, short term exposure limits, peak limitation values, examination of toxic effect at the level of a range of flammable gases
- conditions under which atmospheres become hazardous
- units of measurement used to express concentration of atmospheric contaminants (mg/cubic m. ppm, % v/v).

Underpinning skills could include interpretation and communication of results of sampling.

Resource implications

For the demonstration of competence in this unit it will be necessary to provide a real life environment and/or simulations based on possible incidents. This should be done with access to a range of personal protective clothing and equipment, range of detection equipment as well as suitable simulation and/or sites.

Assessment

Underpinning knowledge may be assessed through written assignments, and observation at simulated incidents.

Consistency of performance

Evidence should be gathered over a range of variables, all using different types of monitoring equipment.

Context of assessment

A demonstration activity using workplaces/atmospheres with detectable but safe levels of contaminants should be used.

Key competencies

1 Collect, analyse and organise information	**2** Communicate ideas and information	**3** Plan and organise activities	**4** Work with others and in teams	**5** Use mathematical ideas and techniques	**6** Solve problems	**7** Use technology
1	1	1	1	1	1	1

Unit title

PMAPER200C Work in accordance with an issued permit

Unit descriptor

This competency unit aims to ensure that people working under a permit to work understand the system, know the limitations of the permit under which they are working and comply with all the requirements of the permit.

This unit covers the basic competency of working under a permit. Where entry to a confined space is required, then PMAPER205A Enter confined space is also required. The standby person competencies are covered by PMAPER201B Monitor and control work permits. The issuing of permits is covered by PMAPER300B Issue work permits or PMAPER302A Issue work permits (hot work/confined spaces)

Prerequisites

This unit **has no** prerequisites.

Element	Performance criteria
1. Identify the scope of the permit.	1.1 Identify the need for a work permit(s) for the work to be carried out 1.2 Identify the type of work permit required 1.3 Check that work to be done complies with the permit type 1.4 Check that the scope and location of work comply with the permit issued.
2. Prepare for permitted work.	2.1 Maintain safe working conditions and environment by using available isolation procedures, safety equipment and emergency procedures 2.2 Monitor plant conditions and hazards to ensure work under the permit remains safe 2.3 Ensure that appropriate safety equipment and clothing are selected and worn as required by the permit and relevant procedures 2.4 Inspect work area to ensure safety and compliance with permit requirements and procedures.
3. Work in accordance with an issued permit.	3.1 Use required hazard reduction/control measures 3.2 Comply with requirements of the permit including standby personnel if required 3.3 Ensure compliance with scope, location and timeframe specified in the permit or seek reauthorisation as required.

Element	Performance criteria
4. Complete permit to work.	4.1 Formally seek and receive authorised extensions to the permit when required 4.2 Withdraw permit when work ceases for an extended period 4.3 Obtain new permits or have existing permit revalidated before work is recommenced 4.4 Check the work conducted against the issued permit to ensure that all the nominated work requirements have been satisfied 4.5 Monitor general housekeeping to ensure that the site has been left in a clean and safe condition 4.6 Communicate status of the work conducted and the results of the permit to relevant personnel 4.7 Complete documentation as required and have permit signed off when job is completed.

Range of variables

Context

This unit typically applies to all work done by maintenance staff and contractors, and also to any other non-process work performed on the plant. All work is to be conducted using the appropriate personal protective equipment.

The types of work permits may include:

- cold work/general permit to work
- excavation
- hot work
- vehicle entry
- minor repairs
- working at heights
- other special permits.

Note that entry to a confined space is covered by *PMAPER205A Enter confined space.* The Australian standard (*AS2865)* definition given for confined space entry is used in this Training Package,

All operations are performed in accordance with standard operating procedures (SOPs).

Checks to ensure a workplace is safe may include:

- 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

Safety equipment may include:

- eye protection, eg, goggles

- ear protection
- gloves
- clothing
- respirators and masks
- helmets
- safety footwear.

The application of this competency should comply with regulatory frameworks, such as:

- legislation/codes
- OHS legislation, codes of practice and guidance material
- EPA
- National and Australian standards
- licence and certification requirements
- internal permit control system.

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

Assessment context and methods

Assessment for this unit of competency will be on an operating plant. The unit will be assessed in as holistic a manner as is practical and may be integrated with the assessment of other relevant units of competency. Assessment will occur over a range of situations which may include disruptions to normal, smooth operation.

Simulation may be required to allow for timely assessment of parts of this unit of competency. Simulation should be based on the actual plant and will include walk throughs of the relevant competency components. Simulations may also include the use of case studies/scenarios and role plays.

This unit of competency requires a body of knowledge which will be assessed through questioning and the use of what if scenarios both on the plant (during demonstration of normal operations and walk throughs of abnormal operations) and off the plant.

Critical aspects

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.

It is essential that competence is demonstrated in the ability to:

- provide reasons for a permit system
- recognise the importance of different work permits
- comply with permit conditions including the wearing of appropriate PPE
- take appropriate action to resolve faults or report faults to appropriate personnel

- explain and implement incident response procedures.

Consistent performance should be demonstrated. In particular look to see that :

- communications are timely and effective
- deviations from permit conditions are recognised, reported, corrected and reauthorisation arranged
- actions specified in the permit/standard procedures are carried out
- all safety procedures are followed.

These aspects may be best assessed using a range of simulations/scenarios/case studies/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.

Resource implications

Assessment will require access to an operating plant over an extended period of time, or a suitable method of gathering evidence of operating ability over a range of situations. A bank of scenarios/case studies/what ifs will be required as will a bank of questions which will be used to probe the reasoning behind the observable actions.

Other assessment advice

In all plants it may be appropriate to assess this unit concurrently with relevant teamwork and communication units.

Essential 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 enterprise's 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 recognising hot work and confined spaces.

Competence includes the ability to:

- access and interpret information relevant to specific tasks eg labels, MSDSs hazchem signs
- 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

- the impact of the regulatory framework and organisation procedures under which the permit operates upon the particular job(s) requiring the permit

The regulatory framework to include:

- OHS
- EPA
- OHS authorities and NOHSC
- licence requirements
- company policy and permit control systems.

Key competencies

1 Collect, analyse and organise information	**2** Communicate ideas and information	**3** Plan and organise activities	**4** Work with others and in teams	**5** Use mathematical ideas and techniques	**6** Solve problems	**7** Use technology
2	2	2	2	1	2	1

Unit title

PMAPER201C Monitor and control work permits

Unit descriptor

This competency covers the monitoring of the operational conditions in which a permit to work has been issued, and the required activities and functions associated with the production/ process of chemical, hydrocarbons, oil, and other process manufactured products. This role may be carried out by the standby person or other appropriately qualified persons.

While this competency carries with it high levels of responsibility the role is usually prescribed by the permit process and may be exercised by any competent operator.

Prerequisites

This unit **has** the following prerequisites:

- PMAPER 200B Work in accordance with an issued permit

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Element	Performance criteria
1. Identify and monitor permit conditions.	1.1 Identify permit requirements 1.2 Monitor permit holder and conditions to ensure that the work being conducted conforms to the issued permit requirements 1.3 Identify and communicate changes in the operating conditions or requirements of the permit to permit holders to ensure they are kept aware of any hazards.
2. Monitor work permit systems.	2.1 Control work activities to comply with the enterprise or site's work permit system and safety procedures 2.2 Check and verify the permit holder's knowledge of the issued permit and its requirements before allowing any repair or maintenance work to be undertaken on the production/process equipment 2.4 Undertake site inspections to ensure that the work to be undertaken is in sequence and completed in a safe and co-ordinated manner 2.5 Identify hazards, and confirm with those undertaking the permitted work that control measures, as defined in the permit are established.
3. Identify and action non-compliance.	3.1 Identify conditions of active permits 3.2 Report and record incidents of non-compliance according to procedures 3.3 Take corrective action upon incidences of non-compliance with permit conditions through the withdrawal or suspension of the issued permit.

Element	Performance criteria
4. Confirm compliance with permit.	4.1 Complete checklists in accordance with standard procedures 4.2 Document and communicate findings to appropriate personnel.

Range of variables

Context

The application of this unit is defined by the level and area of responsibility.

Legislative and site specific safety procedures and/or requirements, including in hazard identification, assessment and application of control measures, must be met.

Compliance is required with:

- legislation/codes
  - OHS
  - EPA
  - OHS authorities and NOHSC
  - licence and certification requirements
  - other relevant standards
- workplace specific permit control system.

Monitor means continual personnel presence to observe conditions of the workplace and work practices to ensure compliance with permit conditions.

Corrective action may include:

- ceasing job
- leaving the job site safe if it is safe and practical to do so
- report reason for ceasing job and request new permit when safe.

Resources and equipment used in this unit may include:

- danger tags and lockouts
- out of service tags
- blinds/blanks
- blind/blank list
- gas testers and monitors
- lights
- ladders
- cathodic protection bonds
- barricades
- signage
- communications equipment
- process and equipment drawings.

The types of work permits may include:

- evacuation
- clearance
- hot work
- vehicle entry
- confined space
- minor repairs
- working at heights
- other special permits.

Safety equipment may include:

- eye protection, eg, goggles
- ear protection
- gloves
- clothing
- respirators and masks
- helmets.

Indicative functions include:

- supervision/monitoring of contractors
- verification of:
  - permits
  - licences
  - tests
  - document control
  - compliance with legislation/codes.

This unit may be applied to either an individual or team related context within the workplace.

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

Assessment context and methods

Assessment for this unit of competency will be on an operating plant. The unit will be assessed in as holistic a manner as is practical and may be integrated with the assessment of other relevant units of competency. Assessment will occur over a range of situations which may include disruptions to normal, smooth operation.

Simulation may be required to allow for timely assessment of parts of this unit of competency. Simulation should be based on the actual plant and will include walk

throughs of the relevant competency components. Simulations may also include the use of case studies/scenarios and role plays.

This unit of competency requires a body of knowledge which will be assessed through questioning and the use of what if scenarios both on the plant (during demonstration of normal operations and walk throughs of abnormal operations) and off the plant.

Critical aspects

Competence must be demonstrated in the ability to distinguish between situations requiring the different types of permit and to list the requirements of each type of permit.

It is essential that competence is demonstrated in the ability to:

- explain the reasons for issuing work permits and for monitoring compliance
- recognise the importance of different work permits
- monitor and control multiple work permits
- apply OHS, permit and other appropriate procedures
- take appropriate action to resolve faults or report faults to appropriate personnel
- explain and implement emergency procedures.

Consistent performance should be demonstrated. In particular look to see that:

- communications are timely and effective
- deviations from permit conditions are recognised, reported, corrected and reauthorisation arranged
- action specified in the permit/standard procedures is carried out
- all safety procedures are followed.

Aspects may be best assessed using a range of scenarios/case studies/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.

Resource implications

Assessment will require access to an operating plant over an extended period of time, or a suitable method of gathering evidence of operating ability over a range of situations. A bank of scenarios/case studies/what ifs will be required as will a bank of questions which will be used to probe the reasoning behind the observable actions.

Other assessment advice

In all plants it may be appropriate to assess this unit concurrently with relevant teamwork and communication units.

Essential knowledge

Knowledge and understanding of permit requirements sufficient to distinguish between situations requiring permits and then implementing the appropriate corrective action where required.

Knowledge of the enterprise's 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.

Competence includes the ability to:

- apply and/or explain:
  - awareness of hazards associated with the permit
  - Australian Standard AS2865 — Safe working in a confined space and relevant legislation
  - identification of container and goods coding and HAZCHEM markings
  - production workflow sequences and requirements for working in confined spaces
  - focus of operation of work systems and equipment
  - application of relevant agreements, codes of practice and other legislative requirements
  - hazards of the materials and process and appropriate hazard control procedures
  - identification and correct use of equipment, processes and procedures
  - planning own work including predicting consequences and identifying improvements

as is relevant to the practical completion of the job.

Demonstration of competence in this unit should include knowledge of the following as appropriate to the process:

- blank/blind lists and P&IDs
- tagging procedures
- isolation procedures
- incident response procedures, including evacuation
- gas types, toxicity and explosivity and limits of each
- oxygen levels
- area knowledge including plant and processes
- permit types and limitations
- static electricity and cathodic protection
- product tolerances and specifications
- environmental hazards
- hot work protective measures
- columns
- vessels
- fire fighting equipment
- blinds/blanks
- pumps
- compressors
- prime movers
- valves.

An understanding of alarm and communication systems is required.

The regulatory framework to include:

- OHS
- EPA
- OHS authorities and NOHSC
- licence and certification requirements
- company policy and permit control systems.

Key competencies

1 Collect, analyse and organise information	**2** Communicate ideas and information	**3** Plan and organise activities	**4** Work with others and in teams	**5** Use mathematical ideas and techniques	**6** Solve problems	**7** Use technology
2	2	2	2	1	2	2

Unit title

PMAPER205B 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.

It is expected that all persons entering the confined space, and the standby person will be competent to enter confined space. It is required that all team members, will be trained in incident response including first aid or CPR.

Prerequisites

This unit has the prerequisite of:

- PMAPER200B Work in accordance with an issued permit.

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 clothing.	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	4.4 Recover, clean, service and store equipment according to procedures and manufacturers guidelines
	4.5 Complete appropriate documentation including withdrawal of permits and records related to use and servicing of equipment
	4.6 Report any issues including signs and symptoms of operational stress, equipment malfunctions.

Range of variables

Context

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

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 (ie. 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 enterprise 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
- 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 (signs, barricades etc.)
- size of work crew
- stand-by personnel and emergency response & 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

All operations are performed in accordance with standard operating procedures.

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

Assessment context and methods

Training and assessment for this unit will comply with the requirements of AS2865, or its authorised update or replacement. This Standard requires that trainers and assessors of confined space competencies are themselves knowledgeable and experienced in confined space work and requirements for training according to relevant legislation and standards. The standard also requires that all persons with work related to confined spaces are reassessed at appropriate intervals to ensure ongoing competency to perform relevant work.

Assessment for this unit of competency will be by simulation or may be assessed 'live' under closes supervision by an appropriately experienced person. The unit will be assessed in as holistic a manner as is practical and may be integrated with the assessment of other relevant units of competency. Assessment will occur over a range of situations which may include disruptions to normal, smooth operation.

Simulation will be required to allow for timely and appropriate assessment of this unit of competency. Simulation should be based on actual plant conditions and will include walk throughs of the relevant competency components. Simulations may also include the use of case studies/scenarios and role plays. An assessment in a (relatively safe) confined space is required.

This unit of competency requires a body of knowledge which will be assessed through questioning and the use of what if scenarios both on the plant (during demonstration of normal operations and walk throughs of abnormal operations) and off the plant.

Critical aspects

Competence must be demonstrated in the ability to recognise and analyse potential situations requiring action and then in implementing appropriate corrective action.

The emphasis should be on the ability to complete the required tasks.

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 enterprise
- 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/enterprise's 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. In particular 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.

These aspects may be best assessed using a range of scenarios/case studies/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.

Resource implications

Assessment may require a simulated confined space. A bank of scenarios/case studies/what ifs will be required as will a bank of questions which will be used to probe the reasoning behind the observable actions.

Training and assessment will require access to testing and monitoring equipment, appropriate PPE, incident response equipment and enterprise procedures.

Other assessment advice

A demonstrated competence in first aid techniques including CPR, use of fire suppression and other incident response equipment is essential.

This unit may be co-assessed with units related to use of breathing apparatus, confined space rescue and use of incident response equipment

Essential knowledge

Knowledge and understanding 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 enterprise's confined space procedures is required.

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/enterprise's specific incident response and rescue requirements
- the permit to work system and the limitations and conditions of the issued permit and authorisation requirements .

Key competencies

1 Collect, analyse and organise information	**2** Communicate ideas and information	**3** Plan and organise activities	**4** Work with others and in teams	**5** Use mathematical ideas and techniques	**6** Solve problems	**7** Use technology
2	2	2	2	1	2	2

Unit title

PMASUP200B Implement production efficiencies

Unit descriptor

The competency covers the ability to identify and implement actions to achieve production targets and to suggest improvements. This unit applies to all employees who are required to participate in process improvement groups.

This unit does not cover maximisation of process/equipment efficiencies undertaken as part of the technician's normal role, which is covered in the relevant OPS competency unit.

The plant technician would:

- understand the production process and recognise production inefficiencies within their area
- participate in and implement strategies for improving production efficiencies.

Generally the plant technician would be part of a team in developing strategies to improve production efficiencies and may be expected to perform all parts of this unit. At all times they would be liaising and cooperating with other members of the team.

Prerequisites

This unit **has** the prerequisites of:

- PMASUP100A Apply workplace procedures
- PMASUP110A Relay and respond to information
- PMAOPS101A Read dials and indicators **OR**
- PMAPROC101B Make measurements.

Elements	Performance criteria
1. Identify raw material components and their application in production.	1.1 Outline the physical and chemical properties of raw material components utilised in the production process
	1.2 Construct a flow chart of the production process relevant to your area/plant
	1.3 Outline parts of the production process where extra care and attention are required
	1.4 Identify the safety and environmental requirements for relevant materials and processes.
2. Identify production targets.	2.1 Identify production targets for work area and work roles taking account of OHS requirements
	2.2 Identify techniques used to measure production performance against targets/standards.
3. Recognise key areas effecting production efficiencies.	3.1 Explain importance of reducing wastage of resources
	3.2 Identify potential sources of wastage/production inefficiencies
	3.3 Outline possible approaches to minimise wastage/ inefficiencies
	3.4 Demonstrate effective techniques to ensure wastage/

Elements	Performance criteria
	production minimisation.
4. Implement actions to achieve production targets.	4.1 Identify the role of the individual and the team in achieving production targets 4.2 Participate in a team to achieve production targets 4.3 Maintain effectiveness if/when changes to processes occur in order to achieve targets.
5. Participate in a team/group to analyse an improvement proposal.	5.4 Explain enterprise procedures for identifying and suggesting improvements 5.5 Explain the use of information in developing improvements 5.6 Analyse problem 5.7 Suggest options for causes of problem 5.8 Suggest options for improvement 5.9 Discuss a proposed improvement with others in a team.

Range of variables

Context

This competency unit applies to a wide range of processes and equipment. In large plants with multiple processes, it may apply to more than one process if those processes interact with each other. It applies to all operators across all functions.

Sources of information may include:

- yearly, monthly, weekly and daily production targets
- business objectives and goals
- control charts, runcharts and graphs
- enterprise manuals and procedures
- equipment specifications.

Sources of process inefficiencies and wastage may include:

- equipment downtime
- spillages
- leaks
- contamination
- raw material quality
- utilities usage
- productivity issues
- incorrect work allocation/priorities/planning
- incorrect processes/procedures.

Typical problems include:

- non-routine process and quality problems
- equipment selection, availability and failure
- teamwork and work allocation problems
- safety and emergency situations and incidents.

All operations are performed in accordance with procedures.

OHS

All operations are subject to stringent OHS requirements and these must not be compromised at any time. Where there is an apparent conflict between performance criteria and OHS requirements, the OHS requirements take precedence.

Evidence guide

Assessment context and methods

Assessment for this unit of competency will be on an operating plant. The unit will be assessed in as holistic a manner as is practical and may be integrated with the assessment of other relevant units of competency. Assessment will occur over a range of situations which will include disruptions to normal, smooth operation.

Simulation may be required to allow for timely assessment of parts of this unit of competency (eg, elements 3 & 5). Simulation should be based on the actual plant and will include walk throughs of the relevant competency components. Simulations may also include the use of case studies/scenarios and role plays.

This unit of competency requires a significant body of knowledge which will be assessed through questioning and the use of what if scenarios both on the plant (during demonstration of normal operations and walk throughs of abnormal operations) and off the plant.

Critical aspects

Evidence of satisfactory performance in this unit can be obtained by observation of performance and questioning to indicate understanding and knowledge of the elements of the competency and performance criteria.

Consistent performance should be demonstrated. In addition, look to see that:

- hazards are identified and controlled
- production targets and measures are identified
- wastage and production inefficiencies for the functional area are identified
- work is conducted in a manner to minimise wastage/inefficiencies
- enterprise procedures for identifying and suggesting improvements are followed
- effective participation in process improvement teams/activities is demonstrated.

These aspects may be best assessed using a range of scenarios/case studies/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, unusual and improbable 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.

Resource implications

Assessment will require access to an operating plant over an extended period of time, or a suitable method of gathering evidence of operating ability over a range of situations. A bank of scenarios/case studies/what ifs will be required as will a bank of questions which will be used to probe the reasoning behind the observable actions.

Other assessment advice

In all plants it may be appropriate to assess this unit concurrently with relevant teamwork or operation units.

Essential knowledge

Competence includes a thorough knowledge and understanding of the process, normal operating parameters and product quality to recognise non-standard situations.

Competence includes the ability to apply and explain, sufficient for the identification and implementation of strategies to maximise production efficiencies:

- relevant equipment and operational processes
- hazards associated with the process
- application of the hierarchy of control in controlling the hazards
- the safety implications of improving efficiencies
- enterprise policies and procedures
- enterprise goals, targets and measures
- enterprise OHS, quality, and environmental requirements
- individual and team roles and responsibilities in achieving safety, quality and environmental targets
- principles of decision making strategies and techniques
- enterprise information systems and data collation
- industry codes and standards.

Key competencies

1 Collect, analyse and organise information	**2** Communicate ideas and information	**3** Plan and organise activities	**4** Work with others and in teams	**5** Use mathematical ideas and techniques	**6** Solve problems	**7** Use technology
1	2	1	2	1	1	1

Unit title

PMASUP210A Process and record information

Unit descriptor

This unit of competency covers the provision and processing of all relevant information by responding to the information requirements of the plant including the completion of all workplace documents and clearly and concisely providing relevant information to others.

The plant technician would:

- complete appropriate plant documentation
- provide appropriate workplace and technical information within their area of expertise
- identify routine information requirements seeking clarification where necessary.

Prerequisites

This unit **has** the prerequisites of:

- PMASUP110A Relay and respond to information.

Element	Performance criteria
1. Access information.	1.1 Identify the need for information 1.2 Request appropriate information 1.3 Access information in accordance with procedures 1.4 Comply with security procedures in accessing appropriate information.
2. Provide appropriate information.	2.1 Deal with enquiries promptly and courteously 2.2 Establish details of enquiry by questioning and summarising 2.3 Provide appropriate information relevant to enquirer's request 2.4 Organise information clearly, concisely and logically 2.6 Provide information in a form that is readily understood by others 2.7 Provide information in a timely manner 2.8 Redirect enquiries to relevant personnel for resolution where outside the operator's area of responsibility.
3. Give and follow routine instructions.	3.1 Give accurate, clear and concise instructions that are consistent with the skills of the receiver 3.2 Ensure that interaction with others is efficient, effective, responsive, courteous and supportive 3.3 Confirm that instructions are understood 3.4 Follow prescribed and routine work related sequences.

Element	Performance criteria
4. Provide written and oral reports.	4.1 Complete handovers providing all appropriate information for the next shift 4.2 Reaffirm handover information by completing status checks 4.3 Complete all workplace documents clearly and accurately in accordance with procedures 4.4 Report all relevant information clearly and concisely.

Range of variables

Context

The competency unit applies to a wide range of information sources and documentation.

This competency includes the following indicative plant documentation :

- operating procedures
- work instructions
- incident procedures
- operating manuals
- quality procedures
- training program contents/materials
- safety data sheets
- job cards
- maintenance logs
- non compliance reports
- incidence and accident reports
- permits
- schematics/process flows/engineering drawings.

This competency includes items of equipment such as:

- telephone
- two way radio
- computer equipment.

Information may be provided:

- orally
- in writing
- one on one
- as part of a group discussion.

All operations are performed in accordance with standard operating procedures.

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

Assessment context and methods

The unit will be assessed in as holistic a manner as is practical and may be integrated with the assessment of other relevant units of competency. Assessment will occur over a range of situations which will include disruptions to normal, smooth operation.

Simulation may be appropriate assessment for this unit of competency. Simulation should be based on the actual plant and will include walk throughs of the relevant competency components. Simulations may also include the use of case studies/scenarios and role plays.

This unit of competency requires a significant body of knowledge which will be assessed through questioning and the use of what if scenarios both on the plant (during demonstration of normal operations and walk throughs of abnormal operations) and off the plant.

Critical aspects

Competence must be demonstrated in the ability to provide and assess all required information and that the information provided both verbally and in writing is completed in a clear and concise manner, that is easily understood by others and in accordance with workplace requirements.

Evidence of satisfactory performance in this unit can be obtained by observation of performance and questioning to indicate understanding and knowledge of the elements of the competency and performance criteria.

Consistent performance should be demonstrated. In particular look to see that:

- reports and records are completed accurately, concisely and in accordance with procedures
- all information is provided in an efficient, effective, courteous and timely manner
- completion of shift handover, log books and company production records conveys all relevant information
- information sharing demonstrates effective communication processes such as turn-taking, participating in discussions and tolerating views of others in a way that contributes to the overall discussion
- notes of discussion are prepared so that they can be clearly interpreted by the receiver
- communication distinguishes between relevant and peripheral issues.

These aspects may be best assessed using a range of scenarios/case studies/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, unusual and improbable 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.

Resource implications

Assessment will require access to an operating plant over an extended period of time, or a suitable method of gathering evidence of operating ability over a range of situations. A bank of scenarios/case studies/what ifs will be required as will a bank of questions which will be used to probe the reasoning behind the observable actions.

Other assessment advice

In all plants it may be appropriate to assess this unit concurrently with relevant teamwork and communication units.

Essential knowledge

Competence to include the ability to apply and explain:

- importance of workplace documentation in relation to job role
- enterprise operational, quality and safety policies and procedures
- workplace codes such as numbers, symbols, signs, colour and other codes.

Key competencies

1 Collect, analyse and organise information	**2** Communicate ideas and information	**3** Plan and organise activities	**4** Work with others and in teams	**5** Use mathematical ideas and techniques	**6** Solve problems	**7** Use technology
1	1	1	1	1	1	1

Unit title

PMASUP220A Monitor and control environmental hazards

Unit descriptor

This competency covers recognising and controlling environmental hazards and incidents. This competency does NOT include the control of significant incidents which are either part of emergency response competencies and/or the role of management personnel.

It is performed by operators who may be expected to control minor environmental incidents or to initiate the control of more significant environmental incidents. In particular it covers:

- identifying environmental hazards and assessing their potential impact
- measuring, monitoring, controlling and reporting environmental hazards in accordance with standard procedures
- cooperating with internal and external regulatory bodies
- participating in investigations of environmental incidents.

At this level an operator, after identifying an environmental hazard, would assess its potential impact and determine its cause. Typically the operator would initiate a response which could include:

- activating relevant alarms
- controlling the hazard in accordance with standard procedures
- measuring or monitoring the hazard in accordance with standard procedures
- documenting and reporting the incident.

As well, the operator would cooperate with internal or external regulatory bodies by supplying information about an incident, or communicating on an ongoing basis with appropriate personnel. The operator would also participate in investigations of the incident, which could include making written or verbal reports.

Prerequisites

This unit **has** the prerequisites of:

- PMASUP120A Follow environmental work practices.

Element	Performance criteria
1. Identify environmental hazards.	1.1 Identify environmental hazards 1.2 Assess location, severity and potential effect of hazard and communicate to appropriate personnel 1.3 Determine cause/source of environmental hazard.
2. Respond to environmental hazard.	2.1 Activate environmental alarms where appropriate 2.2 Control environmental hazard in accordance with standard procedures 2.3 Measure and monitor hazard in accordance with standard procedures 2.4 Document and report a hazardous incident.

Element	Performance criteria
3. Cooperate with internal and external bodies.	3.1 Identify relevant licensing authorities/bodies 3.2 Respond to requests for information in accordance with standard procedures 3.3 Monitor status of the environmental hazard and communicate with appropriate personnel on an ongoing basis.
4. Participate in investigation of environmental incident.	4.1 Complete incident reports in accordance with standard procedures 4.2 Undertake investigations in accordance with standard procedures 4.3 Document and report findings in accordance with standard procedures.

Range of variables

Context

This competency is performed by operators who may be expected to control minor environmental incidents, initiate the control of more significant environmental incidents, cooperate with regulatory authorities and participate in the investigation (internal or external) of environmental incidents within the limits provided by enterprise policy and standard procedures.

Indicative functions include:

- monitoring (using physical senses or instrumentation)
- complying with licensing arrangements
- controlling incidents (initial response for all incidents, controlling minor incidents)
- cooperating with appropriate bodies (internal or external).

Typical problems will include the application of plant and process knowledge to identify environmental hazards and initiate an appropriate response. This includes losses of containment and other sources of environmental incidents where the incident is small enough to be handled by the operator, or for larger/more significant incidents, this includes the cooperation of the operator with the person controlling the incident/incident investigation.

All operations are performed in accordance with standard procedures and policies.

OHS

The identification and control of hazards and the application of OHS is to be in accordance with current, applicable legislation and regulations and company procedures. All work is carried out at all times in accordance with these requirements.

Evidence guide

Assessment context and methods

Assessment for this unit of competency will be on an operating plant. The unit will be assessed in as holistic a manner as is practical and may be integrated with the assessment of other relevant units of competency. Assessment will occur over a range of situations which will include disruptions to normal, smooth operation.

Simulation may be required to allow for timely assessment of parts of this unit of competency. Simulation should be based on the actual plant and will include walk throughs of the relevant competency components. Simulations may also include the use of case studies/scenarios and role plays.

This unit of competency requires a significant body of knowledge which will be assessed through questioning and the use of what if scenarios both on the plant (during demonstration of normal operations and walk throughs of abnormal operations) and off the plant.

Critical aspects

Competence must be demonstrated in the ability to recognise and analyse potential situations requiring action and then in implementing appropriate corrective action. The emphasis should be on the ability to stay out of trouble rather than on recovery from a disaster.

Consistent performance should be demonstrated. In particular look to see that:

- hazards or potential hazards are identified, assessed and their cause determined
- response to environmental hazards is in accordance with standard procedures, which could include measuring, monitoring and implementing hazard control procedures
- relevant licensing authorities/bodies are identified and cooperation/participation related to an incident is provided in accordance with standard procedures.

These aspects may be best assessed using a range of scenarios/case studies/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, unusual and improbable 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.

Resource implications

Assessment will require access to an operating plant over an extended period of time, or a suitable method of gathering evidence of operating ability over a range of situations. A bank of scenarios/case studies/what ifs will be required as will a bank of questions which will be used to probe the reasoning behind the observable actions.

Other assessment advice

In all plants it may be appropriate to assess this unit concurrently with relevant teamwork and communication units.

In a major hazard facility, it may be appropriate to assess this unit concurrently with:

- PMAOHS100A Follow OHS procedures.

Essential knowledge

Competence to include the ability to describe nature and severity of environmental hazards caused by potential incidents including:

- the level of environmental threat posed by potential incidents
- sensitivity of local environment to such environmental threats and
- pathways of pollution from the plant to the environment.

Competence also includes the ability to apply and explain:

- regulatory requirements such as environmental protection regulations, OHS, HAZCHEM, duty of care and dangerous goods requirements
- external licensing requirements such as EPA, water authorities, local councils
- enterprise procedures.

Key competencies

1 Collect, analyse and organise information	**2** Communicate ideas and information	**3** Plan and organise activities	**4** Work with others and in teams	**5** Use mathematical ideas and techniques	**6** Solve problems	**7** Use technology
1	1	1	1	X	2	1

Unit title

PMASUP236A Operate vehicles in the field

Unit descriptor

In a typical scenario an operations technician patrols areas of pipeline or follows pipelines across a variety of terrains looking for problems which require maintenance or reporting. During the course of their work they must check the vehicle for mechanical soundness before leaving base, ensure it is securely and adequately packed, make certain their communications equipment and contact schedule are in order and generally be prepared for long periods off-road.

The operations technician will:

- check their vehicle daily for damage
- ensure fuels and lubricant levels are maintained
- effect minor repairs
- communicate with their base station

Generally the operations technician would be part of a team during field trips, though he/she may be required to undertake limited trips during which they would be expected to be capable of demonstrating competence in all parts of this unit. At all times they would be liaising and cooperating with their base station.

Prerequisites

This unit **has no** prerequisites. However operators will have the appropriate class of driver's license before taking charge of the vehicle.

Element	Performance criteria
1. Prepare vehicle and secure load.	1.1 Conduct vehicle familiarisation checks before starting journey 1.2 Note and rectify any defects where possible or report vehicle for further attention/repair 1.3 Ascertain that all required fuel, water and other supplies required for the journey are available and in useable order 1.4 Inspect all ancillary equipment and operational accessories to ensure they have been attached or secured in a safe and agreed manner 1.5 Secure load including external loads, rear tray, roof racks, and any loads within the vehicle, using appropriate securing equipment.

Element	Performance criteria
2. Undertake journey.	2.1 Familiarise oneself with the route to ensure that an appropriate route has been determined 2.2 Interpret access manuals and topographical maps in order to obtain required information for journey 2.3 Obtain relevant authorisations/notifications and accesses before starting the journey 2.4 Confirm and/or clarify or communicate journey details with relevant company personnel 2.5 Monitor driving conditions and requirements constantly, to meet any changes in terrain, weather conditions and road conditions and requirements 2.6 Monitor and maintain fluid levels and air pressures to ensure safe and efficient vehicle operations 2.7 Monitor vehicle constantly for any malfunctions or factors that may affect vehicle performance 2.8 Maintain vehicle speeds within all stated limits and road condition limitations to minimise the risk of personal injury, environmental damage and load damage 2.9 Maintain communication as required with the relevant company personnel to advise of progress and journey status. 2.10 Ensure seatbelts are worn by all personnel while the vehicle is in motion.
3. Operate vehicle.	3.1 Apply knowledge of vehicle differences to the driving requirements of four wheel drive and conventional vehicles 3.2 Adhere to general principles of four wheel driving in negotiating a variety of terrains and driving conditions 3.3 Use defensive driving techniques 3.4 Observe additional precautions for night driving 3.5 Drive to suit road conditions 3.6 Observe rules prohibiting driving under the influence of alcohol and other performance inhibiting substances.
4. Finalise journey.	4.1 Communicate and confirm termination of journey with the relevant company personnel 4.2 Visually inspect the vehicle to ensure that vehicle is in good repair and order 4.3 Unsecure trailer loads and prepare for unloading utilising the agreed uncoupling process 4.4 Report faults or damage to vehicle to appropriate personnel.

Element	Performance criteria
5. Recover vehicle.	5.1 Identify and assess options for recovery of an immobilised vehicle 5.2 Operate recovery equipment safely 5.3 Perform a battery 'jump start' safely 5.4 Observe safety precautions when rigging cables and chains 5.5 Demonstrate various methods of vehicle recovery 5.6 Change a wheel on a properly jacked vehicle.
6. Maintain vehicle safety.	6.1 Observe appropriate speeds for the road conditions 6.2 Ensure all personnel use a seat belt 6.3 Observe site specific vehicle entry restrictions 6.4 Follow appropriate search and rescue notification procedures 6.5 Follow appropriate procedures for passing large or heavy vehicles.

Range of variables

Context

This unit of competency includes all such vehicles and equipment which form part of the field operator's kit. For your organisation this may include (select relevant items):

- 4wd vehicles, eg, utility, troop carrier or station wagon
- trucks
- communications equipment, ie, 2 way radio, mobile or satellite phone, GPS
- recovery equipment, ie, snatch straps, slings, chains and shackles
- trailers.

Typical problems for your operations may include:

- overheating (coolant, exhaust, driveline)
- low oil pressure
- electrical discharge/overcharge
- tyre punctures
- load shifts.

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

Assessment context and methods

Assessment for this unit of competency will be on an off road vehicle. The unit will be assessed in as holistic a manner as is practical and may be integrated with the assessment of other relevant units of competency. Assessment will occur over a range of situations, which will include disruptions to normal, smooth operation.

Simulation may be required to allow for timely assessment of parts of this unit of competency (eg, elements 1, 3 and 4). Simulation should be based on the actual plant and will include walk throughs of the relevant competency components. Simulations may also include the use of case studies/scenarios, role plays and 3D virtual reality interactive systems. In the case of evacuation training or training for competencies practised in life threatening situations, simulation may be used for the bulk of the training.

This unit of competency requires an application of the knowledge contained in off-road vehicle operation and the equipment integral to its use, to the level needed to maintain control and recognise and resolve problems. This can be assessed through questioning and the use of what if scenarios both on the plant (during demonstration of normal operations and walk throughs of abnormal operations) and off the plant.

Critical aspects

Competence must be demonstrated in the ability to recognise and analyse potential situations requiring action and then in implementing appropriate corrective action. The emphasis should be on the ability to stay out of trouble rather than on recovery from a disaster.

Consistent performance should be demonstrated. In particular look to see that:

- early warning signs of equipment/processes needing attention or with potential problems are recognised
- the range of possible causes can be identified and analysed and the most likely cause determined
- appropriate action is taken to ensure a timely return to full performance
- obvious problems in related plant areas are recognised and an appropriate contribution made to their solution.

These aspects may be best assessed using a range of scenarios/case studies/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, unusual and improbable situations, which may have been generated from the past incident history of the vehicle, incidents on similar vehicles around the world, hazard analysis activities and similar sources.

Resource implications

Assessment will require access to an operating well over an extended period of time, or a suitable method of gathering evidence of operating ability over a range of situations. A bank of scenarios/case studies/what ifs will be required as will a bank of questions which will be used to probe the reasoning behind the observable actions.

Other assessment advice

In all organisations it may be appropriate to assess this unit concurrently with relevant teamwork and communication units. Consider co-assessment with:

- PMASUP241A Maintain pipeline easements
- PMASUP242A Monitor pipeline civil works
- PMASUP340A Conduct pipeline pigging
- PMASUP343A Monitor and maintain pipeline cathodic protection systems
- PMASUP344A Monitor and control repairs and modifications on operational pipelines
- PMAOPS230A Monitor, operate and maintain pipeline stations and equipment.

Essential knowledge

The knowledge referred to in the evidence guide for this unit includes:

- local/company vehicle rules and regulations
- hazards and risks of off-road travel
- requirements for reporting and recording vehicle movements
- communications arrangements (backup methods need to be considered)
- site or area response plan to detail
- procedures to be followed when an incident is reported
- actions to be followed when a traveller is recorded as overdue
- responsibilities for monitoring vehicle journeys and determining immediate and follow-up actions under the system.

Competence also includes the ability to distinguish between causes of problems/alarms/fault indications such as:

- instrument failure/malfunction
- electrical failure/malfunction
- mechanical failure/malfunction
- fouling or contamination
- corrosion.

Key competencies

1 Collect, analyse and organise information	**2** Communicate ideas and information	**3** Plan and organise activities	**4** Work with others and in teams	**5** Use mathematical ideas and techniques	**6** Solve problems	**7** Use technology
2	1	1	1	X	2	1

Unit title

PMASUP237A Undertake crane, dogging and load transfer operations

Unit descriptor

In a typical scenario, an operator who has a qualification as a crane operator or licensed dogger, or who is licensed to operate heavy machinery, moves materials and portable plant around a site. Typical of the plant and equipment moved is:

- packaged compressor units
- large pumps and valves
- pipe.

The operations technician would:

- ensure safe movement of equipment and supplies
- correctly stack, load and unload supplies and equipment
- initiate routine and emergency maintenance on equipment.

Generally the operations technician would be part of a team and may be expected to be capable of performing all parts of this unit. At all times they would be liaising and cooperating with other members of the team.

For forklift operation see *TDTD1097 Operate a forklift.*

Prerequisites

This competency **has** prerequisites of:

- crane operator — possession of appropriate crane operator's licence for the crane on site
- dogman — possession of appropriate crane chaser/dogman or rigger's licence
- appropriate licence for heavy machinery — front end loader/ articulated vehicle.

Check local regulations for details.

Element	Performance criteria
1. Plan and prepare work.	1.1 Carry out a job hazard analysis/job safety analysis for job 1.2 Adhere to site requirements 1.3 Initiate a permit to work as required 1.4 Determine co-ordination requirements with other site personnel 1.5 Determine job method to include hazard prevention and controls, Australian standards for safety procedures, codes of practice and manufacturer's specifications 1.6 Erect barricades, warning signs, overhead protection to requirements 1.7 Calculate mass and dimensions of load 1.8 Calculate safe working load 1.9 Determine positioning of load.

Element	Performance criteria
2. Select equipment.	2.1 Select lifting/moving equipment and accessories consistent with requirements and within safe working capacity of equipment 2.2 Inspect gear and label and reject damaged/worn items 2.3 Select, use and correctly fit personal protective equipment.
3. Secure load.	3.1 Secure load and protect to prevent damage 3.2 Secure moving/loose parts of load and lash to prevent movement 3.3 Attach, position, adjust and secure equipment correctly, to meet requirements for movement of load.
4. Move load.	4.1 Prepare load destination to accept load 4.2 Move load safely to required destination in accordance with planned procedure 4.3 Use standard communication signals to co-ordinate safe movement of the load.
5. Remove gear.	5.1 Remove equipment/gear/accessories safely from load 5.2 Inspect equipment/gear/accessories for wear and damage, clean, maintain and store, and record usage and condition 5.3 Complete site/job records.
6. Control hazards	6.1 Identify hazards in site work area 6.2 Assess the risks arising from those hazards 6.3 Implement measures to control those risks in line with procedures and duty of care.
7. Respond to problems.	7.1 Monitor transfer frequently and critically throughout load shifting using measured/indicated data and senses (sight, hearing, etc) as appropriate. 7.2 Recognise transfer problems 7.3 Analyse cause of transfer problems within scope of skill level 7.4 Take timely and appropriate action to solve transfer problems.

Range of variables

Context

This unit of competency includes all such items of equipment and unit operations which form part of the site's load shifting system. For your plant this may include (select relevant items):

- crane
- front end loader
- dogging and rigging equipment
- load shifting equipment (eg, slings, ropes, shackles, eye bolts, spreader beams, equalising gear, clamps, pulley systems, winches, packs, rigging screws).

Site information may include:

- plans
- drawings
- specifications.

Requirements may be set by:

- State regulatory bodies
- road traffic authorities
- local government
- enterprise/company.

Typical problems for your plant may include:

- unstable loads or load swinging
- faulty or damaged lifting gear
- obstructions on site
- unsafe lifting practices.

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

Assessment context and methods

Assessment for this unit of competency will be on an operating plant or using appropriate practical simulations. The unit will be assessed in as holistic a manner as is practical and may be integrated with the assessment of other relevant units of competency. Assessment will occur over a range of situations, which will include disruptions to normal, smooth operation.

Simulation may be required to allow for timely assessment of parts of this unit of competency (eg, elements 1 to 5). Simulation should be based on the actual plant and will include walk throughs of the relevant competency components. Simulations may also include the use of case studies/scenarios, role plays and 3D virtual reality interactive systems. In the case of evacuation training or training for competencies practised in life threatening situations, simulation may be used for the bulk of the training.

This unit of competency requires an application of the knowledge contained in the use of the load shifting equipment, to the level needed to maintain control and recognise and resolve problems. This can be assessed through questioning and the use of what if scenarios both on the plant (during demonstration of normal operations and walk throughs of abnormal operations) and off the plant.

Critical aspects

Competence must be demonstrated in the ability to apply pre-requisite skills within the context of an operating plant, recognise and analyse potential situations requiring action and then in implementing appropriate corrective action. The emphasis should be on the ability to stay out of trouble rather than on recovery from a disaster.

Consistent performance should be demonstrated. In particular look to see that:

- early warning signs of equipment/processes needing attention or with potential problems are recognised
- the range of possible causes of problems can be identified and analysed and the most likely cause determined
- appropriate action is taken to ensure a safe lifting operation is performed
- obvious problems in related plant areas are recognised and an appropriate contribution made to their solution.

These aspects may be best assessed using a range of scenarios/case studies/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, unusual and improbable 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.

Resource implications

As a general rule assessment will require access to an operating plant over an extended period of time, or a suitable method of gathering evidence of operating competence over a range of situations. A bank of scenarios/case studies/what ifs will be required as will a bank of questions which will be used to probe the reasoning behind the observable actions.

Other assessment advice

In all plants it may be appropriate to assess this unit concurrently with relevant teamwork and communication units.

Essential knowledge

The knowledge referred to in the evidence guide for this unit includes:

- safe working capacity and limits of the equipment
- company specific work organisations and workflow
- all items on a schematic of the equipment and the function of each
- nature/condition of materials being shifted and the particular hazards of each

Competence also includes the ability to isolate the causes of problems to an item of equipment within the load shifting system and to distinguish between causes of problems/alarms/fault indications such as:

- equipment failures
- load spills or damage
- electrical failure
- mechanical failure
- operational problems.

Key competencies

1 Collect, analyse and organise information	**2** Communicate ideas and information	**3** Plan and organise activities	**4** Work with others and in teams	**5** Use mathematical ideas and techniques	**6** Solve problems	**7** Use technology
1	2	2	2	1	1	1

Unit title

PMASUP240A Undertake minor maintenance

Unit descriptor

In a typical scenario a plant technician does minor maintenance activities on the plant and equipment being operated. For instance the pressure drop across a filter unit may be high, indicating the filter cartridge needs changing. The plant technician takes the filter unit out of operation, cleans the unit, uses the correct spanner to open the lid, installs a fresh cartridge, closes the unit using the spanner again, then cleans up the area and disposes of the spent cartridge.

The unit does NOT apply to activities requiring trade training.

The plant technician would:

- be aware of and contribute to a safe working environment
- identify and report operational problems to their supervisor/control room operator
- undertake minor maintenance activities including gaining and following safety clearances, use of tools, planning and area clean-up (in accordance with position description).

The plant technician could operate independently or as part of a team running a plant. The plant technician would be expected to be capable of performing all parts of this unit. At all times they would be liaising and cooperating with other members of the team.

Prerequisites

This unit **has no** prerequisites.

Element	Performance criteria
1. Identify maintenance requirements.	1.1 Identify equipment variations/irregularities using observed data and plant records 1.2 Assess the urgency of the situation 1.3 Identify appropriate corrective action 1.4 Identify correct tools and materials 1.5 Assess the impact of the maintenance activity and communicate to appropriate personnel 1.6 Identify work permit requirements.
2. Prepare for maintenance activity.	2.1 Isolate and decontaminate the work area 2.2 Clear the area of obstructions and hazardous materials 2.3 Obtain the appropriate work permits and adhere to the requirements 2.4 Communicate the impending maintenance activity to the appropriate personnel.

3. Use appropriate tools, materials, methods and procedures.	3.1 Use tools and maintenance techniques correctly 3.2 Obtain appropriate parts or materials for the maintenance activity 3.3 Use and interpret maintenance manuals, manufacturer's information and procedures.
4. Perform maintenance activity.	4.1 Ensure correct tools and materials are available 4.2 Access all relevant information 4.3 Undertake maintenance activity in accordance with maintenance manuals, manufacturer's information, procedures and work permit conditions 4.4 Restore equipment to normal working condition 4.5 Leave work area in a clean and safe condition 4.6 Ensure permits are signed off as appropriate.
5. Test equipment.	5.1 Test equipment according to procedures 5.2 Return equipment to service 5.3 Ensure equipment meets normal operating requirements.
6. Record maintenance activity.	6.1 Complete maintenance activity logs/plant history records 6.2 Report maintenance activity to appropriate personnel 6.3 Identify and report outstanding maintenance requirements to appropriate personnel.

Range of variables

Context

This competency is typically performed by experienced operators.

This competency unit includes minor maintenance such as the following:

- operational maintenance
  - connection-disconnection of hoses
  - greasing, lubrication and lubricant systems
  - adjusting sealing glands
  - cleaning and changing filters
  - 'nipping up' flanges
  - general cleaning
- removal and replacement:
  - gland packing
  - changing blades or cutters
  - replacing gaskets
  - replacing /maintaining seals.

Typical information sources, observed data and plant records may include:

- plant data
- log sheets
- operational and performance reports
- condition monitoring information
- physical aspects such as noise, smell, feel and temperature

- performance trends
- planned maintenance schedules
- procedures
- manufacturer's specifications, instructions, service manuals and other information
- plant description manuals.

Typical tools and equipment used may include:

- hand tools
- specialised tools
- measuring and aligning equipment.

All operations are performed in accordance with procedures and relevant legislative or site specific safety requirements.

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.

All work to be undertaken within the limits of the issued permit to work - this may include both hot and cold work requirements and may be within a team or individual context.

Evidence guide

Assessment context and methods

Assessment for this unit of competency will be on an operating plant. The unit will be assessed in as holistic a manner as is practical and may be integrated with the assessment of other relevant units of competency. Assessment will occur over a range of situations which will include disruptions to normal, smooth operation.

Simulation may be required to allow for timely assessment of parts of this unit of competency (eg, element 1). Simulation should be based on the actual plant and will include walk throughs of the relevant competency components. Simulations may also include the use of case studies/scenarios and role plays.

This unit of competency requires a significant body of knowledge which will be assessed through questioning and the use of what if scenarios both on the plant (during demonstration of normal operations and walk throughs of abnormal operations) and off the plant.

Critical aspects

Competence must be demonstrated in the ability to recognise and analyse potential situations requiring action and then in implementing appropriate corrective action. The emphasis should be on the ability to stay out of trouble rather than on recovery from a disaster.

Consistent performance should be demonstrated. In particular look to see that:

- early warning signs of equipment/processes needing attention or with potential problems are recognised
- the range of possible causes can be identified and analysed and the most likely cause determined
- appropriate action is taken to ensure a timely return to full performance
- obvious problems in related plant areas are recognised and an appropriate contribution made to their solution.

These aspects may be best assessed using a range of scenarios/case studies/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, unusual and improbable 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.

Resource implications

Assessment will require access to an operating plant over an extended period of time, or a suitable method of gathering evidence of operating ability over a range of situations. A bank of scenarios/case studies/what ifs will be required as will a bank of questions, which will be used to probe the reasoning behind the observable actions.

Other assessment advice

In all plants it may be appropriate to assess this unit concurrently with relevant teamwork and communication units.

In a major hazard facility, it may be appropriate to assess this unit concurrently with:

- PMAOHS200 Participate in workplace safety procedures.

Essential knowledge

Competence to include the ability to apply and explain

- principles of operation of the equipment to be maintained
- function and troubleshooting of major internal components and their problems
- typical causes of equipment failures and the service conditions which may increase maintenance
- types and nature of maintenance (preventative, predictive, corrective) uses, benefits and limitations
- urgency and timeliness factors in maintenance
- maintenance planning/scheduling/records systems
- identification of tools, materials and spare parts
- basic techniques for using and handling tools
- physical measurement, alignment and clearance principles

as is relevant to the practical operation of equipment at that job level.

Key competencies

1 Collect, analyse and organise information	**2** Communicate ideas and information	**3** Plan and organise activities	**4** Work with others and in teams	**5** Use mathematical ideas and techniques	**6** Solve problems	**7** Use technology
1	1	1	1	1	1	1

Unit title

PMASUP241A Maintain pipeline easements

Unit descriptor

In a typical scenario, operators are required to conduct ground and aerial patrols to monitor and determine easement condition so as to maintain and ensure pipeline integrity. This includes continuous liaison and contact with landowners and contractors associated with pipeline systems.

The operator would:

- monitor and report on signage and gate difficulties
- identify and advise the organisation of any pipeline operational problems
- facilitate access to pipelines in consultation with landowners within the context of environmental regulations
- facilitate provision of resources to deal with pipeline incidents.

Generally operators would be part of a team and would be expected to be capable of performing all parts of this unit. At all times they would be liaising and cooperating with other members of the team.

Prerequisites

This unit **has no** prerequisites.

Element	Performance criteria
1. Plan and prepare maintenance activity.	1.1 Interpret topographical and geographical maps to determine the selection of access and pipeline route 1.2 Select and operate equipment appropriate to the maintenance task in accordance with manufacturer's specifications 1.3 Inspect and assess easement to determine the required maintenance activities 1.4 Interpret assessment results and prepare reports/documents outlining further actions required.
2. Maintain pipeline easement and surrounding environment.	2.1 Maintain easement in accordance with environmental legislative requirements and enterprise requirements 2.2 Isolate and secure work area to enable repair to proceed in accordance with legislative requirements and enterprise requirements 2.3 Monitor and log the condition of signage/gates and easement ancillary equipment 2.4 Undertake remedial action to ensure that signage/gates and ancillary equipment is maintained in accordance with legislative requirements.

Element	Performance criteria
3. Monitor civil activities.	3.1 Monitor civil works to ensure pipeline integrity and requirements are maintained and adhered to 3.2 Restore work area and easement to legislative and enterprise standards 3.3 Maintain records as necessary.
4. Maintain liaison with third parties.	4.1 Maintain continuous liaison and contact with landowners and contractors associated with the pipeline system 4.2 Advise third parties of intended activities by the issue of appropriate notices 4.3 Conduct meetings with third parties to discuss notified issues 4.4 Record meeting outcomes for actioning and future reference in accordance with legislative requirements and enterprise requirements.
5. Control hazards.	5.1 Identify hazards in pipeline work area 5.2 Assess the risks arising from those hazards 5.3 Implement measures to control those risks in line with procedures and duty of care.
6. Respond to problems.	6.1 Identify possible problems in equipment or process 6.2 Determine problems needing action 6.3 Determine possible fault causes 6.4 Rectify problem using appropriate solution within area of responsibility 6.5 Follow through items initiated until final resolution has occurred 6.6 Report problems outside area of responsibility to designated person.

Range of variables

Context

This unit of competency includes all such items of equipment and unit operations which are utilised in the maintenance of pipeline easements. For your enterprise this may include:

- light aircraft (pilot provided)
- off road vehicles
- gas leakage detectors
- vegetation control documentation
- workplace mapping, eg, pipeline alignment drawings, topographical maps, geographical maps
- pipeline access route manuals
- MSDS information
- operating procedures.

Typical problems for your enterprise may include:

- isolation and risk of exposure
- gas or fluid leaks
- accidental or geophysical rupturing of pipelines.

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

Assessment context and methods

Assessment for this unit of competency will be on an operating pipeline. The unit will be assessed in as holistic a manner as is practical and may be integrated with the assessment of other relevant units of competency. Assessment will occur over a range of situations, which will include disruptions to normal, smooth operation.

Simulation may be required to allow for timely assessment of parts of this unit of competency (eg, elements 1 and 4). Simulation should be based on the actual plant and will include walk throughs of the relevant competency components. Simulations may also include the use of case studies/scenarios, role plays and 3D virtual reality interactive systems. In the case of evacuation training or training for competencies practised in life threatening situations, simulation may be used for the bulk of the training.

This unit of competency requires an application of the knowledge contained in the use of the pipeline and its integral equipment, to the level needed to maintain control and recognise and resolve problems. This can be assessed through questioning and the use of what if scenarios both on the plant (during demonstration of normal operations and walk throughs of abnormal operations) and off the plant.

Critical aspects

Competence must be demonstrated in the ability to recognise and analyse potential situations requiring action and then in implementing appropriate corrective action. The emphasis should be on the ability to stay out of trouble rather than on recovery from a disaster.

Consistent performance should be demonstrated. In particular look to see that:

- early warning signs of pipeline easements needing attention or with potential problems are recognised
- the range of possible causes can be identified and analysed and the most likely cause determined
- appropriate action is planned and implemented to rectify identified problems
- effective communication and interpersonal skills are used in relation to third party liaison activities.

These aspects may be best assessed using a range of scenarios/case studies/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, unusual and improbable situations which may have been generated from the past incident history of pipelines, incidents on similar pipelines around the world, hazard analysis activities and similar sources.

Resource implications

Assessment will require access to pipeline easements and pipeline maintenance work sites over an extended period of time, or a suitable method of gathering evidence of operating ability over a range of situations. A bank of scenarios/case studies/what ifs will be required as will a bank of questions which will be used to probe the reasoning behind the observable actions.

Other assessment advice

It may be appropriate to assess this unit concurrently with relevant teamwork and communication units. Consider co-assessment with:

- PMASUP220A Monitor and control environmental hazards
- PMASUP242A Monitor pipeline civil works
- PMASUP236A Operate vehicles in the field.

Essential knowledge

The knowledge referred to in the evidence guide for this unit includes:

- appropriate local knowledge
- specific environmental procedures and requirements
- legal obligations and standing of both parties as it relates to access rights
- knowledge of the pipeline system and access routes
- appropriate and safe vegetation control techniques
- erosion control techniques
- company and legislative environmental policies, practices and procedures
- pipeline signage and application requirements.

Competence also includes the ability to isolate the causes of problems to the pipeline and to distinguish between causes of problems/alarms/fault indications such as:

- various disturbances on or in the easement
- visual evidence of a pipeline rupture
- erosion and subsidence.

Key competencies

1 Collect, analyse and organise information	**2** Communicate ideas and information	**3** Plan and organise activities	**4** Work with others and in teams	**5** Use mathematical ideas and techniques	**6** Solve problems	**7** Use technology
2	2	2	2	2	2	2

Unit title

PMASUP242A Monitor pipeline civil works

Unit descriptor

In a typical scenario, operators are required to plan and monitor civil works and maintenance activities being carried out on pipeline easements and associated facilities by external contractors.

The operator would:

- identify and report on the nature of civil works to be undertaken in relation to pipeline easements
- establish the suitability of the equipment and machinery to be used in the work
- ensure the site is accessible to equipment and authorised personnel
- work with third parties and contractors.

Generally the operator would be part of a team, though on occasions would be required to work individually and in isolation and would be expected to be capable of performing all parts of this unit. At all times they would be liaising and cooperating with other members of the team.

Prerequisites

This unit **has** the prerequisite of:

- PMASUP241A Maintain pipeline easements.

Element	Performance criteria
1. Interpret civil drawings and data.	1.1 Determine required civil works through the interpretation of reports and investigations 1.2 Access and interpret pipeline alignment drawings to determine area of excavation/civil activity 1.3 Liaise with appropriate authorities, third parties and company personnel to advise of proposed works.
2. Inspect machinery.	2.1 Inspect equipment required to undertake civil works to ensure that it conforms to company requirements 2.2 Monitor equipment is transported to site by the most appropriate method or means.
3. Prepare easement/site for civil activities.	3.1 Undertake site inspection of the civil works prior to any work commencing, ensuring layout and access to site is obtainable 3.2 Prepare site in accordance with outcomes of inspection and conduct hazard analysis 3.3 Apply knowledge of pipeline crossing design prior to excavation/activity commencing 3.4 Issue permits to work in order for work to be carried out and, where required, follow relevant company procedures/work instructions.

Element	Performance criteria
4. Monitor easement/site for civil activities.	4.1 Monitor civil works to ensure pipeline integrity, permit to work and procedure requirements are maintained and adhered to 4.2 Apply knowledge of required health, safety and environmental legislative requirements to site works 4.3 Restore the site and carry out easement on completion of civil works 4.4 Verify and cancel issued permit to work 4.5 Locate, interpret and follow procedures related to carrying out pipeline civil works.
5. Control hazards.	5.1 Identify hazards in pipeline work area 5.2 Assess the risks arising from those hazards 5.3 Implement measures to control those risks in line with procedures and duty of care.
6. Respond to problems.	6.1 Identify possible problems in equipment or process 6.2 Determine problems needing action 6.3 Determine possible fault causes 6.4 Rectify problem using appropriate solution within area of responsibility 6.5 Follow through items initiated until final resolution has occurred 6.6 Report problems outside area of responsibility to designated person.

Range of variables

Context

This unit of competency includes all such items of equipment and unit operations which form part of the monitoring system. For your enterprise this may include:

- pipe locating equipment
- gas detection equipment
- transport and excavation equipment
- hand tools
- safety signage/barricades and materials.

Typical problems might include:

- isolation and risk of exposure
- gas or fluid leaks
- accidental or geophysical rupturing of pipelines.

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

Assessment context and methods

Assessment for this unit of competency will be on an operating plant. The unit will be assessed in as holistic a manner as is practical and may be integrated with the assessment of other relevant units of competency. Assessment will occur over a range of situations, which will include disruptions to normal, smooth operation.

Simulation may be required to allow for timely assessment of parts of this unit of competency (eg, elements 1 to 3). Simulation should be based on the actual plant and will include walk throughs of the relevant competency components. Simulations may also include the use of case studies/scenarios, role plays and 3D virtual reality interactive systems. In the case of evacuation training or training for competencies practised in life threatening situations, simulation may be used for the bulk of the training.

This unit of competency requires an application of the knowledge contained in the use of the pipeline and its integral equipment, to the level needed to maintain control and recognise and resolve problems. This can be assessed through questioning and the use of what if scenarios both on the plant (during demonstration of normal operations and walk throughs of abnormal operations) and off the plant.

Critical aspects

Competence must be demonstrated in the ability to recognise and analyse potential situations requiring action and then in implementing appropriate corrective action. The emphasis should be on the ability to stay out of trouble rather than on recovery from a disaster.

Consistent performance should be demonstrated. In particular look to see that:

- company policies and procedures for pipeline maintenance work are understood and followed
- early warning signs of equipment needing attention or with potential problems are recognised
- the range of possible causes can be identified and analysed and the most likely cause determined
- appropriate action is planned and implemented to rectify identified problems.

These aspects may be best assessed using a range of scenarios/case studies/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, unusual and improbable situations which may have been generated from the past incident history of pipeline maintenance work, incidents on similar pipeline systems around the world, hazard analysis activities and similar sources.

Resource implications

Assessment will require access to pipeline easements and pipeline maintenance work sites over an extended period of time, or a suitable method of gathering evidence of operating ability over a range of situations. A bank of scenarios/case studies/what ifs will be required as will a bank of questions which will be used to probe the reasoning behind the observable actions.

Other assessment advice

In all plants it may be appropriate to assess this unit concurrently with relevant teamwork and communication units. Consider co-assessment with:

- PMASUP220A Monitor and control environmental hazards
- PMASUP241A Maintain pipeline easements
- PMAPER201A Monitor and control work permits
- PMASUP236A Operate vehicles in the field.

Essential knowledge

The knowledge referred to in the evidence guide for this unit includes:

- pipe locating equipment
- the operation of gas detection equipment
- use of safety signage/barricades and materials
- relevant State and federal legislation
- company procedures and company work instructions
- environmental management programs.

Competence also includes the ability to isolate the causes of problems in pipeline easements and to distinguish between causes of problems/alarm/fault indications such as:

- inappropriate work practices
- visual evidence of a pipeline rupture
- erosion and subsidence
- equipment breakdowns
- smell or sound of escaping pipeline contents.

Key competencies

1 Collect, analyse and organise information	**2** Communicate ideas and information	**3** Plan and organise activities	**4** Work with others and in teams	**5** Use mathematical ideas and techniques	**6** Solve problems	**7** Use technology
2	2	2	2	2	2	2

Unit title

PMASUP243A Monitor and maintain pipeline coatings

Unit descriptor

In a typical scenario, the operator will be carrying out inspection and testing activities on coated pipelines both in the plant and in the field to procedures and to the parameters established through the principle reference standard AS 2885 Part 3. They will also be involved in maintaining the pipeline coating which may have sustained damage for a variety of reasons. Activities will include assessing, through a range of testing and inspection techniques, the integrity of a pipeline's protective coating, and identifying areas requiring repair. Pipelines typically will require preparation to enable the work to be carried out, followed by inspection and testing activities to procedures to ensure the adequacy of the repair work.

The operator would:

- identify and rectify operational problems
- maintain a suitable database of information
- utilise the information to develop appropriate intervention strategies

Generally the operator would work on an individual basis and would be expected to be capable of performing all parts of this unit. They would be part of a team during pipeline startup and shutdown procedures. At all times they would be liaising and cooperating with other members of the team.

Prerequisites

This unit **has no** prerequisites.

Element	Performance criteria
1. Prepare pipelines for inspection/testing.	1.1 Plan and prepare for inspection of pipeline coating to procedures 1.2 Identify pipeline location to determine workplace hazards 1.3 Consult appropriate personnel to ensure the work is coordinated effectively with others involved on the work site 1.4 Obtain tools and equipment needed to carry out the work to procedures and check for correct operation and safety.
2. Inspect and test pipeline coatings.	2.1 Visually inspect pipeline coatings to determine condition and location of irregularities 2.2 Test pipeline as required to ensure system conforms to required operating parameters 2.3 Report and record information related to status and any irregularity/deviations to procedures.

Element	Performance criteria
3. Prepare pipeline surface and repair coating.	3.1 Isolate work area to enable repair to proceed to procedures 3.2 Prepare the pipeline surface to receive the coating repair material using appropriate methods 3.3 Recoat the pipeline to procedures and test the repair area.
4. Notify completion of work.	4.1 Ensure worksite is clean and waste material is disposed of correctly to procedures and legislative requirements 4.2 Inform the control centre of the outcome of repairs and any abnormal situations 4.3 Return pipeline system to normal service to procedures if safe to do so 4.4 Notify work completion, incidents and irregularities to procedures.
5. Compile and analyse reports.	5.1 Collect and compile repair and operational data into accepted reporting format 5.2 Ensure reports provide an accurate and ongoing record of deviations in the performance of the pipeline system 5.3 Utilise information or reports for short and long term control planning.
6. Control hazards.	6.1 Identify hazards in pipeline work area 6.2 Assess the risks arising from those hazards 6.3 Implement measures to control those risks in line with procedures and duty of care.
7. Respond to problems	7.5 Identify possible problems in equipment or process 7.6 Determine problems needing action 7.7 Determine possible fault causes 7.8 Rectify problem using appropriate solution within area of responsibility 7.9 Follow through items initiated until final resolution has occurred 7.10 Report problems outside area of responsibility to designated person.

Range of variables

Context

This unit of competency includes all such items of equipment and unit operations which form part of the inspection and testing system. For your plant this may include:

- low voltage and high voltage holiday detectors
- coating materials
- coating thickness gauges and meters
- densitometers

- condensators
- coating defect assessment survey equipment, eg, DCVG method equipment, Pearson technique method equipment.

Typical problems for your situation may include:

- coating failure
- temperature, pressure and flow variations
- damage from geophysical or other circumstances
- communication failures.

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

Assessment context and methods

Assessment for this unit of competency will be on an operating plant. The unit will be assessed in as holistic a manner as is practical and may be integrated with the assessment of other relevant units of competency. Assessment will occur over a range of situations, which will include disruptions to normal, smooth operation.

Simulation may be required to allow for timely assessment of parts of this unit of competency (eg, elements 1 to 4). Simulation should be based on the actual plant and will include walk throughs of the relevant competency components. Simulations may also include the use of case studies/scenarios, role plays and 3D virtual reality interactive systems. In the case of evacuation training or training for competencies practised in life threatening situations, simulation may be used for the bulk of the training.

This unit of competency requires an application of the knowledge contained in the use of the pipeline and its integral equipment, to the level needed to maintain control and recognise and resolve problems. This can be assessed through questioning and the use of what if scenarios both on the plant (during demonstration of normal operations and walk throughs of abnormal operations) and off the plant.

Critical aspects

Competence must be demonstrated in the ability to recognise and analyse potential situations requiring action and then in implementing appropriate corrective action. The emphasis should be on the ability to stay out of trouble rather than on recovery from a disaster.

Consistent performance should be demonstrated. In particular look to see that:

- early warning signs of equipment/processes needing attention or with potential problems are recognised
- the range of possible causes can be identified and analysed and the most likely cause determined
- appropriate action is taken to ensure a timely return to full performance

- obvious problems in related plant and field areas are recognised and an appropriate contribution made to their solution.

These aspects may be best assessed using a range of scenarios/case studies/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, unusual and improbable 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.

Resource implications

As a general rule assessment will require access to an operating pipeline system over an extended period of time, or a suitable method of gathering evidence of operating competence over a range of situations. A bank of scenarios/case studies/what ifs will be required as will a bank of questions which will be used to probe the reasoning behind the observable actions.

Other assessment advice

In all plants it may be appropriate to assess this unit concurrently with relevant teamwork and communication units.

Essential knowledge

The knowledge referred to in the evidence guide for this unit includes:

- all items on a schematic of the pipeline system and the function of each
- surface coating materials, their composition and application
- routine and non-routine repair techniques
- causes and remedies of common problems such as those selected in the range of variables
- various coating inspection and test requirements.

Competence also includes the ability to isolate the causes of problems to equipment within the pipeline system and to distinguish between causes of problems/alarm/fault indications such as:

- variations in coating thickness
- instrument failure/wrong reading
- CP system characteristics
- incorrect interpretation of MSDS information
- operational problems.

Key competencies

1 Collect, analyse and organise information	**2** Communicate ideas and information	**3** Plan and organise activities	**4** Work with others and in teams	**5** Use mathematical ideas and techniques	**6** Solve problems	**7** Use technology
2	2	2	2	2	2	2

Unit title

PMBCOMP201B Use computers in the workplace

Unit descriptor

This competency covers the use of computer equipment and company software programs including selecting the correct programs for use and identifying minor faults in equipment or software. It applies to all sectors of the industry.

This competency is typically performed by all operators working either independently or as part of a work team.

Prerequisites

This competency has **no** prerequisites.

Element	Performance criteria
1. Identify information equipment and system.	1.8 Identify types of computerised equipment used in the work area 1.9 Identify functions of equipment, component parts and accessories 1.10 Identify routine faults in operating systems, software applications and operator errors 1.11 Identify sources of information on rectifying faults and operating equipment, systems and applications 1.12 Explain and follow security/company protection procedures.
2. Set up, input and retrieve files/data.	2.1 Adjust work station equipment to meet ergonomic requirements and use appropriate posture 2.2 Boot, log on and check for viruses (where required) 2.3 Navigate network to find appropriate program/file 2.4 Use operating manuals and/or help screens for equipment and software 2.5 Select and access software packages and accessories for required application 2.6 Create, correctly identify and open files 2.7 Identify data to be edited 2.8 Enter, change or delete data using keyboard/mouse, scanners or other appropriate equipment 2.9 Confirm input for accuracy 2.10 Save data regularly to avoid loss of data.

Element	Performance criteria
3. Present files/data, shutdown and exit system.	3.1 Access appropriate printers and use print preview to check document/data for format and layout if required 3.2 Transmit files/data electronically if required 3.3 Save files/data prior to shutdown 3.4 Follow shutdown procedures for files, applications and equipment 3.5 Access saved files through relevant directories 3.6 Make back up copies if required and store information and disks in accordance with procedures.

Range of variables

This competency unit includes items of equipment such as:

- computers - stand alone and/or networked
- mobile terminals and hand held devices
- printers
- mouse, keyboard
- facsimile equipment
- onboard terminals
- scanners
- bar coders.

Software applications may include:

- CC mail and email
- internet or intranet
- word processing, database and spreadsheet programs
- company/process specific software.

Documents may include:

- work orders
- work instructions/standard operating procedures
- email or CC mail
- faxes
- memos
- tables
- standard letters
- standard reports.

Typical problems include:

- software problems such as unable to access file, find correct page or send email, input data
- security issues
- communication between different users and systems
- viruses
- use of templates, standard forms, etc.

All operations are performed in accordance with standard procedures.

It includes the operation of all relevant additional equipment where that equipment is integral to the use of the computer/computer system.

Procedures means all relevant workplace procedures, work instructions, temporary instructions and relevant industry and government codes and standards.

Evidence guide

Essential knowledge and enterprise requirements

Knowledge of the enterprise's procedures and relevant regulatory requirements along with the ability to implement them within appropriate time constraints and work standards.

Competence includes the ability for the practical completion of the job to:

- apply and/or explain:
  - security procedures
  - functions of various hardware and software programs used on site
  - routine faults in computer equipment or software programs
- utilise in plant computer programs
- recognise and solve routine software or equipment problems
- complete documents/records to standard required.

Critical aspects

Consistent performance should be demonstrated. In particular look to see that:

- equipment is used in accordance with procedures
- data is accessed, inputted and saved correctly
- output standards are met consistently.

Language, literacy and numeracy requirements

This unit requires the ability to read and interpret typical product specifications, job sheets and material labels as provided to operators.

Writing is required to the level of completing workplace forms.

Basic numeracy is also required.

Assessment method and context

Competence in this unit may be assessed:

- on an operating plant over a time frame which allows for operation under all normal and a range of abnormal conditions
- by use of a suitable simulation and/or a range of case studies/scenarios
- by a combination of these techniques.

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.

Resource implications:

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 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.

Key Competencies

1 Collect, analyse and organise information	**2** Communicate ideas and information	**3** Plan and organise activities	**4** Work with others and in teams	**5** Use mathematical ideas and techniques	**6** Solve problems	**7** Use technology
2	1	2	1	1	2	2

Unit title

PMCSUP292A Sample and test materials and product

Unit descriptor

This competency covers the taking of routine samples and the conducting of simple tests. This competency is typically performed by operators working either independently or as part of a work team.

Prerequisites

This unit **has no** prerequisites.

Element	Performance criteria
1. Take sample.	1.1 Determine type of sample and sampling equipment required 1.2 Check sampling equipment is clean and in good order. 1.3 Take sample(s) of required type(s), from the required place(s) and at the required time(s) and place in required container(s) 1.4 Label sample(s) 1.5 Carry sample(s) to required place.
2. Complete test.	2.1 Check test required from procedures/work instruction 2.2 Check sample identification and integrity 2.3 Check test equipment is clean, in good order and within calibration 2.4 Complete test(s) required as per standard procedures/instructions.
3. Interpret results and take action.	3.1 Note anything about sample, equipment or the test itself which may have caused it to give a bad result 3.2 Compare results to specification 3.3 Take action appropriate to the test results and any other observations.
4. Complete sample and test cycle.	4.1 Complete required records 4.2 Store and/or dispose of sample as required 4.3 Clean all equipment and leave ready for next sample/test.

Range of variables

Context

This competency unit includes the range of sampling and testing which may be carried out in the plant or in a plant laboratory. It typically applies to operators who carry out a narrow range of tests as part of their job.

It does NOT include testing which would normally be conducted in a laboratory, nor operators carrying out a wide range of testing which is a significant part of their job role. See Laboratory Operations Training Package.

Typical problems include:

- correct sampling technique
- test equipment condition/calibration
- consistent test technique according to standard procedure/work instruction
- correct recording of result
- interpretation of result and the initiation of appropriate action
- correct retention/disposal of sample/test materials.

All operations are performed in accordance with standard procedures and work instructions.

OHS

The identification and control of hazards and the application of OHS is to be in accordance with current, applicable legislation and regulations and company procedures. All work is carried out at all times in accordance with these requirements.

Evidence guide

Assessment context and methods

Competence in this unit may be assessed by observation over time on an operating plant. Where this is done, the time frame must allow for adequate assessment of operation under all normal and a range of abnormal conditions. Where this is not practical, additional assessment techniques must be used.

Competence may also be assessed by use of a suitable simulation and/or a range of case studies/scenarios. A combination of these techniques should be used to ensure the competency is adequately assessed.

In all cases it is expected that the practical assessment will be supported by targeted questioning to assess the underpinning knowledge. Questioning will be undertaken in such a manner as is appropriate to the language and literacy levels of the operator and reflecting the requirements of the competency.

Critical aspects

It is essential that the specific techniques be understood and that the importance of critical sampling and testing factors is known. Competence must be demonstrated in the ability to recognise and analyse potential situations requiring action and then in implementing appropriate corrective action.

Consistent performance should be demonstrated. In particular look to see that:

- reproducible results are obtained
- suspicious results are identified and appropriate action taken
- all equipment is maintained in a clean state and in good order.

Competence must be demonstrated in the operation of all ancillary equipment to the level required for this competency unit.

Resource implications

Resources required include suitable access to an operating plant or equipment which allows for appropriate and realistic simulation. A bank of case studies/scenarios will also be required where these form part of the assessment method. Questioning may take place either in the workplace, or in an adjacent, quiet facility such as an office, lunch room, etc. No other special resources are required.

Other assessment advice

In a major hazard facility, it may be appropriate to assess this unit concurrently with:

- PMAOHS200 Participate in workplace safety procedures

Essential knowledge

Knowledge and understanding of the sampling and testing techniques used sufficient to recognise a suspicious test result cause by a fault in these areas.

Knowledge of the enterprises standard procedures and work instructions and relevant regulatory requirements along with the ability to implement them within an appropriate time frame and in a manner relevant to the completion of the sample/test cycle.

Competence includes the ability to apply and/or describe:

- principles of taking this particular sample
- principles of this particular test
- distinguish between causes of out of specification/suspicious results such as:
- sample
- test
- process

as is relevant to the practical operation of the sample/test cycle.

Key competencies

1 Collect, analyse and organise information	**2** Communicate ideas and information	**3** Plan and organise activities	**4** Work with others and in teams	**5** Use mathematical ideas and techniques	**6** Solve problems	**7** Use technology
1	1	1	1	1	1	1

Unit title

BSATEM201A Participate in allocation and completion of team tasks

Unit descriptor

This unit covers identifying team goals, working in a team to achieve the goals and completing own tasks within enterprise timelines.

Prerequisites

- This unit **has no** prerequisites.

Element	Performance criteria
1. Participate in identifying tasks for team.	1.1 Goals for the team are identified in conjunction with the team 1.2 Tasks required to achieve goals are identified 1.3 Responsibilities of individuals within the team are allocated in discussion with the team to ensure designated team goals are met.
2. Complete own tasks.	2.1 Time and resources needed to complete tasks are estimated correctly 2.2 Responsibilities are re-negotiated to meet changes in the workplace 2.3 Assistance is sought from other team members when difficulties arise in achieving allocated tasks 2.4 Allocated tasks are completed within designated timelines 2.5 Information and feedback provided by others in the team is acknowledged.
3. Assist others to complete team tasks.	3.1 Support is provided to colleagues to ensure designated team goals are met 3.2 The team's performance is evaluated according to its goals.

Range of variables

- Enterprise procedures and policies
- Size of team
- Team goals, eg,
  - individual
  - section
  - enterprise.

Evidence guide

Critical aspects

Evidence of satisfactory performance in this unit is best obtained by observation of performance, questioning and discussion.

More specifically, to indicate understanding and knowledge of negotiating with team members to allocate and complete tasks to achieve team goals in accordance with enterprise procedures and policies.

Check that:

- enterprise goals are maintained
- team members are coached and supported to achieve team goals
- timelines are agreed upon
- allocation of tasks, responsibilities and resources are appropriate
- allocated tasks are completed within timelines.

Unit title

TDTD1097B Operate a forklift

Unit descriptor

This unit involves the skills and knowledge required to operate a forklift, including checking forklift condition, driving the forklift to fulfill operational requirements, and monitoring and maintaining forklift performance. Assessment of this unit will usually be undertaken within a licensing examination conducted by, or under the authority of, the relevant State/Territory OHS authority.

Persons achieving competence in this unit will need to fulfill all of the relevant State/Territory OHS regulatory requirements concerning the safe operation of forklifts.

Prerequisites

This unit **has no** prerequisites.

Element	Performance criteria
1. Check forklift condition.	1.1 Condition of forklift is checked for compliance with OHS and workplace requirements for warning devices, manufacturer's specifications and the nature of the load shifting task 1.2 Attachments are checked to ensure appropriate adjustment and operation 1.3 Mirrors and seats are adjusted for safe operation by the driver 1.4 Log books are checked and appropriate workplace documentation is completed in accordance with workplace requirements.
2. Drive the forklift.	2.1 Forklift is started, steered, manoeuvred, positioned and stopped in accordance with regulations and manufacturer's instructions 2.2 Engine power is managed to ensure efficiency and performance and to minimise engine and gear damage 2.3 Operational hazards are identified and/or anticipated and avoided or controlled through defensive driving and appropriate hazard control techniques 2.4 The forklift is driven in reverse, maintaining visibility and achieving accurate positioning 2.5 The forklift is parked, shut down and secured in accordance with manufacturer's specifications, regulations and workplace procedures.

Element	Performance criteria
3. Monitor and maintain forklift performance.	3.1 Performance and efficiency of vehicle operation is monitored during use 3.2 Defective or irregular performance and malfunctions are reported to relevant personnel 3.3 Forklift records are maintained/updated in accordance with workplace procedures and legislative requirements.

Range of variables

Context

- Operation of a forklift must be carried out in compliance with the licence requirements and regulations of the relevant State/Territory authority.
- Operation of a forklift is performed under some supervision, generally within a team environment.
- Operation of a forklift involves the application of routine equipment operation principles and procedures to maintain the safety and operation of a forklift in a variety of operational contexts.

Worksite environment

- Types of forklift may include counterbalance trucks, reach trucks and pallet trucks
- Operations may be carried out in typical forklift operational situations, including:
  - operations conducted at day or night
  - typical weather conditions
  - on the open road
  - on a private road or worksite
  - while at a workplace.
- Customers may be internal or external.
- Workplaces may comprise large, medium or small worksites.
- Work may be conducted in:
  - restricted spaces
  - exposed conditions
  - controlled or open environments.
- Loads to be shifted may require special precautions.
- Loads to be shifted may be:
  - irregularly shaped
  - packaged or unpackaged
  - labelled or unlabelled
  - palleted or unpalleted.
- Hazards in the work area may include exposure to:
  - chemicals
  - dangerous or hazardous substances
  - movements of equipment, goods and materials.

- Personnel in the work area may include:
  - workplace personnel
  - site visitors
  - contractors
  - official representatives.
- Forklift handling procedures may include:
  - starting a forklift
  - steering and manoeuvring a forklift
  - accelerating and braking
  - positioning and stopping a forklift
  - reversing a forklift
  - operating forklift controls, instruments and indicators
  - using defensive driving techniques
  - managing engine performance.
- Pre-operational checks may include:
  - visual check of forklift
  - checking and topping up of fluid levels
  - checks of tyres
  - checks of operation of forklift lights and indicators
  - checks of brakes.
- Hazards may include (examples only):
  - wet and iced operating surfaces
  - oil on operating surface
  - faulty brakes
  - workplace obstacles and other operational equipment and vehicles
  - damaged loads and pallets
  - other personnel in work area.
- Depending on the type of organisation concerned and the local terminology used, workplace procedures may include:
  - company procedures
  - enterprise procedures
  - organisational procedures
  - established procedures.
- Personal protection equipment may include:
  - gloves
  - safety headwear and footwear
  - safety glasses
  - two-way radios
  - high visibility clothing.

Sources of information/documents

Information/documents may include:

- goods identification numbers and codes, including IMDG markings and HAZCHEM signs
- manifests, bar codes, picking slips, merchandise transfers, stock requisitions, goods and container identification
- Australian Standard 2359 — Industrial Truck Code

- manufacturer's specifications for forklift and associated equipment
- operations and service record book or log
- workplace procedures and policies for the operation of forklifts
- supplier and/or client instructions
- ADG Code and materials safety data sheets
- regulatory requirements concerning the use of forklifts
- award, enterprise bargaining agreement, other industrial arrangements
- standards and certification requirements
- quality assurance procedures
- emergency procedures.

Applicable regulations and legislation

Applicable procedures and codes may include:

- relevant State/Territory regulations pertaining to the operation of forklifts
- relevant codes and standards, including Australian Standard 2359 — Industrial Truck Code
- relevant State/Territory OHS legislation
- relevant State/Territory fatigue management regulations
- relevant State/Territory environmental protection legislation.

Evidence guide

Assessment context

- Assessment of competence must comply with the assessment requirements of the relevant State/Territory forklift licensing authority.
- Assessment of this unit must be undertaken by a Registered Training Organisation:
  - As a minimum, assessment of knowledge must be conducted through appropriate oral and/or written questioning
  - Appropriate practical assessment must occur at the Registered Training Organisation, and/or in an appropriate work situation.

Critical aspects

Assessment must confirm appropriate knowledge and skills to:

- operate a forklift safely in a workplace environment
- handle loads and drive defensively
- manage forklift controls, read instruments and adjust engine power to site requirements
- locate, interpret and apply relevant information
- carry out pre-operational checks on a forklift
- work effectively with colleagues
- convey information in written and oral form
- maintain workplace records
- use workplace colloquial and technical language and communication technologies in the workplace context
- meet relevant regulatory requirements.

Resource implications

Access is required to opportunities to:

- participate in a range of exercises, case studies and other real or simulated practical and knowledge assessments that demonstrate the skills and knowledge to operate a forklift to carry out a range of load shifting operations in a workplace, and/or
- operate a forklift to shift loads in an appropriate range of operational situations.

Other assessment advice

This unit of competency may be assessed in conjunction with other units that are part of a worker's job function.

In a major hazard facility, it may be appropriate to assess this unit concurrently with:

- PMAOHS100A Follow OHS procedures.

Essential knowledge

- knowledge of relevant duty of care requirements pertaining to the operation of a forklift
- relevant OHS and environmental procedures and regulations
- forklift controls, instruments and indicators and their use
- forklift handling procedures
- procedures to be followed in the event of an operational emergency
- engine power management and safe operating strategies
- efficient driving techniques
- pre-operational checks carried out on forklift and related action
- site layout and obstacles
- operating hazards and related defensive driving and hazard control techniques
- principles of stress management when driving a forklift
- workplace operating procedures
- ability to identify points of balance and safe lifting positions on a range of loads when operating a forklift
- ability to read instructions, procedures and signage relevant to the operation of a forklift
- ability to monitor and anticipate operational hazards and take appropriate action.

Consistency in performance

- Applies underpinning knowledge and skills when:
  - operating a forklift safely in workplace environment
  - handling loads and driving defensively
  - managing forklift controls, reading instruments and adjusting engine power to site requirements
  - locating, interpreting and applying relevant information
  - carrying out pre-operational checks
  - working effectively with colleagues
  - conveying information in relevant form
  - maintaining workplace records.
- Shows evidence of application of relevant workplace procedures including:
  - relevant State/Territory regulations and licence requirements pertaining to forklift operation
  - OHS policies and procedures

- identification of operational hazards and the use of appropriate defensive driving and hazard control techniques
- workplace procedures and work instructions (including security and housekeeping procedures)
- forklift manufacturer's guidelines and instructions
- environmental protection procedures when operating a forklift and carrying out pre-operational checks.

- Action is taken promptly to report and/or rectify accidents, incidents and any identified faults or malfunctions in accordance with manufacturer's instructions, regulatory requirements and workplace procedures.
- Performance is demonstrated consistently over a period of time and in a suitable range of contexts.
- Work is completed systematically with required attention to detail and without injury to self or others or damage to goods or equipment.

Key competencies

1 Collect, analyse and organise information	**2** Communicate ideas and information	**3** Plan and organise activities	**4** Work with others and in teams	**5** Use mathematical ideas and techniques	**6** Solve problems	**7** Use technology
1	1	2	1	2	2	2

Unit title

PMAOHS300B Implement and monitor OHS policies and procedures for a work group

Unit descriptor

On completion of this unit, the worker will be able to accurately implement and monitor defined OHS policies and procedures for a work group or area, within their scope of responsibilities. The worker will also be capable of coaching the team in participating and contributing to OHS management issues. The worker will be able to perform duties that are required of a safety committee member or safety representative in an organisation. Typically this worker might be a team leader or on the OHS committee.

Prerequisites

This unit **has** the prerequisite of:

- PMAOHS200A Participate in workplace safety procedures.

Element	Performance criteria
1. Communicate OHS information for coworkers in team.	1.1 Accurately and clearly explain to the work group basic OHS rights, responsibilities and requirements 1.2 Provide, in a readily accessible manner, information on the relevant enterprise OHS policies, procedures and programs, and accurately and clearly explain them to the work group 1.3 Regularly provide relevant information about identified hazards and the outcomes of risk assessment and risk control procedures, and accurately and clearly explain them to the work group.
2. Coach coworkers in team.	2.1 Establish mutual support groups, eg, buddy system, to encourage effective development of individual and group competencies in OHS 2.2 Provide personal encouragement and assistance to team members to contribute to the management of OHS at the workplace.
3. Facilitate the consultative process.	3.1 Deal with and promptly resolve issues raised through consultation or refer to the appropriate personnel for resolution in accordance with workplace procedures 3.2 Seek input from work group on OHS issues and potential changes to process, procedures or work place 3.3 Encourage and use feedback from individuals and teams to identify and implement improvements in the management of OHS 3.4 Promptly inform the work group of the outcomes of consultation over OHS issues.

Element	Performance criteria
4. Implement and monitor enterprise procedures for identifying hazards, and assessing and controlling risk.	4.1 Implement and monitor adherence to work procedures to identify hazards and assess and control risk 4.2 Monitor existing risk control measures and report results regularly 4.3 Access internal and external sources of relevant OHS information 4.4 Evaluate and identify inadequacies in existing risk control measures in accordance with the hierarchy of control, and report to designated personnel 4.5 Identify inadequacies in resource allocation for implementation of risk control measures and report to designated personnel 4.6 Identify actual/potential inadequacies in procedures and report to designated personnel 4.7 Identify actual/potential inadequacies in individual or team competency and report to designated personnel.
5. Maintain and use OHS records.	5.1 Accurately and legibly complete OHS records for work area, in accordance with workplace requirements for OHS records and legal requirements for the maintenance of records of occupational injury and disease 5.2 Use aggregated information from the area's OHS records to identify hazards and monitor risk control procedures within work area according to procedures and within scope of responsibilities and competencies.

Range of variables

Context

This unit of competency describes OHS requirements applicable for all workers who are responsible for the organisation of occupational health and safety arrangements for a work group or area, including coaching.

This competency covers process manufacturing plants which may involve workplace hazards such as:

- chemicals and hazardous materials
- gases and liquids under pressure
- moving machinery
- materials handling
- working at heights, in restricted or confined spaces, or environments subjected to heat, noise, dusts or vapours.

Enterprise policies and procedures include those which directly or indirectly cover OHS issues, such as:

- hazard policies and procedures
- standard operating procedures
- safety procedures

- work instructions
- emergency, fire and accident procedures
- personal protective clothing and equipment procedures.

OHS records include:

- hazard and incident reports
- logs/logs sheets
- inspection/start up/shut down checklists
- injury reports
- maintenance records

Sources of relevant OHS information include:

- external
  OHS legislation and codes of practice
  industry standards for materials, process, equipment etc
  NOHSC/SA/ISO standards
  OHS authorities eg WorkCover
  unions and industry associations
  internet, journals, magazines
  manufacturer's/suppliers manuals/specifications
- internal
  policies and procedures
  JSA, risk assessments, HAZOPs
  hazard, incident and injury records
  training resources
  employee information brochures, newsletters etc
  OHS reports such as inspections, technical reports.

It is expected that workers will be provided with clear directions, information, instruction, training and appropriate supervision regarding the relevant State/Territory OHS legislation, codes of practice, relevant industry standards, workplace procedures and work instructions.

Designated personnel for OHS referrals may include:

- employer
- supervisor
- employees elected as OHS representatives
- other personnel with OHS responsibilities.

Participative arrangements for OHS management may involve:

- following OHS procedures
- information sessions on existing or new issues
- meetings between employer and employees or representatives
- access to relevant workplace information
- use of clear and understandable language.

OHS issues which may need to be raised by workers with other workers and/or designated personnel may include:

- recognition of hazards and assessment of risk

- problems encountered in risk control measures and implementation
- observation following an injury and/or incident
- clarification of understanding of OHS policies and procedures.

Evidence guide

Assessment context and methods

Assessment for this unit of competency will be on an operating plant. The unit will be assessed in as holistic a manner as is practical and may be integrated with the assessment of other relevant units of competency. Assessment will occur over a range of situations which will include disruptions to normal, smooth operation.

Simulation may be required to allow for timely assessment of parts of this unit of competency. Simulation should be based on the actual plant and will include walk throughs of the relevant competency components. Simulations may also include the use of case studies/scenarios and role plays.

This unit of competency requires a significant body of knowledge which will be assessed through questioning and the use of what if scenarios both on the plant (during demonstration of normal operations and walk throughs of abnormal operations) and off the plant.

Critical aspects

It is essential that the workplace OHS system and State OHS regulations be understood and that the importance of critical procedures is known. Competence must be demonstrated in the ability to:

- communicate effectively with the work group(s)
- proactively promote consultation and participation in the OHS processes
- participate in decisions which impact on OHS for their workgroup.

Consistent performance should be demonstrated. In particular look to see that the required level includes a working knowledge of all relevant workplace procedures. Look to see knowledge and understanding of:

- specific hazard policies and the use of hazard procedures (eg, identify, assess, control)
- the consultation processes, either general or specific to occupational health and safety
- occupational health and safety information
- occupational health and safety record keeping
- counselling, disciplinary and issue resolution processes.

These aspects may be best assessed using a range of scenarios/case studies/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, unusual and extreme situations that 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.

Resource implications

Assessment will require access to an operating plant over an extended period of time, or a suitable method of gathering evidence of operating ability over a range of situations. A bank of scenarios/case studies/what ifs will be required as will a bank of questions that will be used to probe the reasoning behind the observable actions.

Other assessment advice

It is expected that this competency may be applicable in combination with other industry, occupation or workplace-specific competencies. In all plants it may be appropriate to assess this unit concurrently with relevant teamwork and communication units.

Essential knowledge

Knowledge and understanding of the workplace OHS system and State OHS regulations, codes of practice and relevant industry standards sufficient to implement and monitor OHS activities for a work group or area within the scope of their responsibilities and competencies.

In these industries which are characterised by high potential hazard, employees need to exercise their duty of care responsibilities not only within the general OHS Acts and regulations, but also within those State and national standards applying to hazardous substances, dangerous goods and major hazards.

Competence includes the ability to:

- apply and describe:
  - identification of hazards in the workplace and standard controls
  - assessment of risk and implementation of risk control measures
  - rights and responsibilities of employees under OHS legislation
  - obligations of employers under the OHS legislation
  - legislative requirements for information and consultation
  - arrangements for consultation within the workplace
- locate, understand and follow workplace OHS procedures
- identify and communicate with all key personnel in the organisation
- identify and access relevant sources of information
- interpret OHS data such as tables of numbers and graphs
- apply and explain:
  other management systems and procedures for occupational health and safety
  literacy levels and communication skills of employees in the area of responsibility
  the hierarchy of control.

Key competencies

1 Collect, analyse and organise information	**2** Communicate ideas and information	**3** Plan and organise activities	**4** Work with others and in teams	**5** Use mathematical ideas and techniques	**6** Solve problems	**7** Use technology
2	3	3	3	2	3	2

Unit title

PMAOHS310A Investigate incidents

Unit descriptor

This competency unit refers to the investigation of incidents that occurred at the workplace. These incidents can be vary from large to small, completely internal or partially externally coordinated. They include, but are not limited to, all types of emergencies, fires, OHS and/or environmental incidents.

In a typical scenario, minor incidents which are subject to internal investigation will be conducted by the plant operator/technician, and for a more major investigation, or one subject to external investigation, he/she will assist with the investigation and/or undertake identified parts of the investigation. The exact definition of the scope of responsibility will depend on company policy, as will the level of the person undertaking these investigations. These investigations will be in accordance with company procedures for such investigations which will be consistent with any relevant regulations.

Prerequisites

This unit **has no** prerequisites.

Element	Performance criteria
1. Monitor and review emergency situation.	1.1 Undertake site inspections of incident scene 1.2 Communicate with relevant personnel regarding specific aspects of the emergency situation 1.3 Monitor corrective action procedures 1.4 Communicate changes to the situation to appropriate personnel.
2. Record investigation process and results as appropriate.	2.1 Establish and secure boundaries of the incident scene to prevent contamination of prospective evidence/exhibits 2.2 Identify and interview persons relevant to the incident 2.3 Identify and record evidence/exhibits at the scene prior to examination to ensure continuity 2.4 Assess relevant information, documentation and evidence/exhibits 2.5 Determine point of origin and most likely cause of incident of the emergency 2.6 Determine risk factors affecting the emergency 2.7 Identify and analyse a range of other possible causes 2.8 Identify and utilise support services to investigate the incident scene 2.9 Process, record and communicate information/evidence/ exhibits, forms and documents to appropriate personnel following enterprise policies and procedures.

3. Make suggestions to improve handling of emergency situation.	3.1 Identify and assess tactical factors and resulting priorities occurring during the emergency 3.2 Formulate appropriate suggestions to improve handling of similar emergency situation based upon information available 3.3 Identify obvious problems in related plant area and make an appropriate contribution to their solution.

Range of variables

Context

Job safety and environment analysis will be conducted in accordance with required company procedures and policies.

This competency covers process manufacturing plants which may involve workplace hazards such as:

- chemicals and hazardous materials
- gases and liquids under pressure
- moving machinery
- materials handling
- working at heights, in restricted or confined spaces, or environments subjected to heat, noise, dusts or vapours.

Incidents/emergencies may include, but are not limited to:

- accidents
- fire
- chemical or oil spills
- gas leak or vapour emission
- utilities failure
- bomb scares
- OHS incidents
- environmental incidents.

Enterprise policies and procedures include those which directly or indirectly cover emergency situations, such as:

- emergency, fire and accident procedures
- hazard policies and procedures
- standard operating procedures (SOPs)
- safety procedures
- work instructions
- personal protective clothing and equipment procedures.

Evidence gained as a result of investigations may include:

- video tapes
- audio tapes
- drawings

- photographs
- plans
- manifests
- relevant documents
- personal notes
- physical evidence/materials
- debris
- soil.

Support services may include incident scene specialists:

- pathologists
- forensic investigators
- coroner
- government medical officers
- interpreters
- technical services
- legal officers
- undertakers
- forensic accountants
- information technology consultants
- document examiners
- handwriting experts
- financial organisations
- external law enforcement agencies.

Interview strategies may vary but require consideration of:

- location
- timing
- method (direct questioning, empathetic questioning)
- strategies for developing rapport
- who is being interviewed
- exclusion of leading questions
- avoidance of cross-examination.

Legal and policy requirements differ according to the status of the person being interviewed. Such requirements may include:

- the presence of a solicitor, independent person, family member or interpreter
- special consideration that applies disabled, child, parent, age, gender, ethnicity and race.

Post investigation documentation may include:

- statements
- proformas
- photographs

- tape recordings.

Designated personnel for incident investigation referrals may include:

- employer
- personnel directly involved in responding to the incident, including:
  - first response personnel
  - emergency response team members
  - emergency team leader(s)
  - first aid officers
- other personnel with emergency team leader responsibilities.

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

Assessment context and methods

Assessment for this unit of competency will be on an operating plant. The unit will be assessed in as holistic a manner as is practical and may be integrated with the assessment of other relevant units of competency. Assessment will occur over a range of situations which will include disruptions to normal, smooth operation.

Simulation may be required to allow for timely assessment of parts of this unit of competency. Simulation should be based on the actual plant and will include walk throughs of the relevant competency components. Simulations may also include the use of case studies/scenarios and role plays.

This unit of competency requires a significant body of knowledge which will be assessed through questioning and the use of what if scenarios both on the plant (during demonstration of normal operations and walk throughs of abnormal operations) and off the plant.

Critical aspects

Competence must be demonstrated in the ability to recognise and analyse potential situations requiring action and then in implementing appropriate corrective action within the scope and level of their responsibilities and competencies.

Consistent performance should be demonstrated. In particular look to see that wherever possible:

- the scene is secure and evidence is preserved
- evidence is collected in accordance with legislative requirements
- point of origin and most likely cause of incident is determined
- a range of other possible causes can be identified and analysed
- obvious problems in related plant areas are recognised and an appropriate contribution made to their solution
- emergency reporting procedures are understood and followed.

These aspects may be best assessed using a range of scenarios/case studies/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, unusual and extreme situations which may have been generated from the past incident history of the plant, incidents on similar plants around the world, hazard analysis activities (eg, HAZOP) and similar sources.

Resource implications

Assessment will require access to an operating plant over an extended period of time, or a suitable method of gathering evidence of operating ability over a range of situations. A bank of scenarios/case studies/what ifs will be required as will a bank of questions which will be used to probe the reasoning behind the observable actions.

Other assessment advice

In all plants it may be appropriate to assess this unit concurrently with relevant teamwork and communication units.

Essential knowledge

Knowledge and understanding of the investigation of incidents sufficient to recognise and assess causes of emergency situations and then to determine improvements to the actual response within the scope and level of their responsibilities and competencies.

A demonstrated working knowledge and application of the company's specific work organisations and workflow would be highly regarded. An ability to coordinate own work and the work of other team members is also regarded as a component of this unit of competency.

Competence includes the ability to:

- apply and describe:
  - factors affecting fire behaviour
  - characteristics of fire and fuel types
  - security of an incident scene
  - examination of an incident scene
  - collection of physical evidence
  - workplace documentation and recording systems
  - use of personal protective equipment
- apply and explain:
  - liaison techniques with third parties
  - workplace procedures and work instructions
  - company policies regarding health and safety and environment
  - hazard identification, assessment and control of risk
  - basic risk assessment of workplace jobs/tasks
  - environmental impacts likely to arise from activities
  - measures for eliminating and/or reducing impacts on the environment.

Knowledge and underpinning skills are required in:

- communication (listening, questioning) and negotiation in questioning witnesses
- analytical and decision making skills
- problem solving skills in responding to a range of emergency situations
- exhibit handling and preserving continuity of evidence

- witness management, in particular demonstration of ethical behaviour and cultural awareness.

Key competencies

1 Collect, analyse and organise information	**2** Communicate ideas and information	**3** Plan and organise activities	**4** Work with others and in teams	**5** Use mathematical ideas and techniques	**6** Solve problems	**7** Use technology
2	2	2	2	2	3	2

Unit title

PMAOHS311A Lead emergency teams

Unit descriptor

This unit of competency is designed to allow an individual to lead and coordinate an emergency team, including deployment of resources at the scene of an emergency. Typically they would be leading a fire emergency team. A person undertaking this unit of competency would be normally nominated to assume the responsibility of emergency team leader.

Prerequisites

This unit **has no** prerequisites.

Element	Performance criteria
1. Assess the nature and extent of the emergency.	1.1 Determine the nature and extent of the emergency in order to ascertain the level and degree of the emergency and what required actions and management strategies should be implemented 1.2 Communicate the nature and extent of the emergency in a timely and appropriate manner to other nominated emergency or facility personnel 1.3 Facilitate the rescue of personnel at risk, control/extinguish the emergency and to make the affected area safe through application of rescue and control strategies 1.4 Ensure all team members are adequately instructed, protected and equipped to function safely and effectively in the emergency situation through the application of personal protective equipment.
2. Effect rescue of personnel at risk.	2.1 Instruct rescue teams to effect the search for, and rescue of, personnel identified as being at risk 2.2 Allocate resources to potentially exposed or threatened personnel and assets, and minimise the likelihood of escalation of the risk.
3. Confine the spread of emergency.	3.1 Initiate extinguishing responses promptly in order to eliminate the emergency 3.2 Render affected areas safe in order to prevent the likelihood of further re-occurrence, or threat to personnel or assets 3.3 Provide feedback to facility or other nominated personnel concerning the status of the emergency.

Range of variables

Context

Those persons who normally operate or are based permanently or regularly assigned to an onshore or offshore installation or facility and lead an emergency response team would require this unit of competency.

This unit could be applied to any of the following installations or facilities:

- onshore/offshore rig/installation
- island based facility
- floating production vessel or platform
- onshore production, processing and/or storage facilities
- pipeline easements
- maintenance bases.

This competency covers process manufacturing plants which may involve workplace hazards such as:

- chemicals and hazardous materials
- gases and liquids under pressure
- moving machinery
- materials handling
- working at heights, in restricted or confined spaces, or environments subjected to heat, noise, dusts or vapours.

Emergency situations may include:

- accidents
- fires
- chemical or oil spills
- gas leak or vapour emission
- utilities failure
- bomb scares.

Equipment may include:

- fire extinguishing agents and water curtains
- hoses
- mobile extinguishers
- stretchers
- personal protective clothing and equipment such as:
  - chemical protective clothing
  - distress alarms
  - structural fire protective clothing
- self contained breathing apparatus (SCBA)
- communication equipment.

Emergency extinguishing media may include:

- water

- foam
- extinguishing powder
- gaseous extinguishing agents
- vapourising liquids
- other fire extinguishing substances.

On-scene hazards may include:

- smoke, darkness and heat
- electricity
- gas
- structural hazards
- structural collapse
- industrial — machinery, equipment, product
- hazardous products and materials
- unauthorised personnel.

Emergency strategies and tactics may include:

- direct attack
- indirect attack
- combination attack
- exposure protection
- internal/offensive attacks
- confining the spread of incident
- rescuing occupants
- cooling the fuels
- removal of fuels
- interrupting the chemical chain reaction
- exclusion of oxygen.

Relevant facility fire management and safety systems include:

- fire management systems
- communication systems
- relevant facility emergency management and contingency response plans.

Relevant legislative and safety case management principles and agreements must be adhered to.

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

Assessment context and methods

Assessment for this unit of competency will be on an operating plant. The unit will be assessed in as holistic a manner as is practical and may be integrated with the assessment of other relevant units of competency. Assessment will occur over a range of situations which will include disruptions to normal, smooth operation.

Simulation may be required to allow for timely assessment of parts of this unit of competency. Simulation should be based on the actual plant and will include walk throughs of the relevant competency components. Simulations may also include the use of case studies/scenarios and role plays.

This unit of competency requires a significant body of knowledge which will be assessed through questioning and the use of what if scenarios both on the plant (during demonstration of normal operations and walk throughs of abnormal operations) and off the plant.

Critical aspects

Competence must be demonstrated in the ability to recognise and analyse potential situations requiring action and then in implementing appropriate corrective action. The emphasis should be on the ability to minimise the effects of the critical situation.

Consistent performance should be demonstrated. In particular look for:

- ability to work effectively as a team and as a team leader
- recognition of the behaviour of fire and other emergency situations
- impact of emergency tactics
- evidence that emergency operations are conducted in accordance with the organisation's safe work practices.

These aspects may be best assessed using a range of scenarios/case studies/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, unusual and extreme situations which may have been generated from the past incident history of the plant, incidents on similar plants around the world, hazard analysis activities (eg, HAZOP) and similar sources.

Resource implications

Assessment will require access to an operating plant over an extended period of time, or a suitable method of gathering evidence of operating ability over a range of situations. A bank of scenarios/case studies/what ifs will be required as will a bank of questions which will be used to probe the reasoning behind the observable actions.

Other assessment advice

The skills and knowledge contained within this unit of competency could be utilised as a normal part of a person's responsibilities and duties.

In all plants it may be appropriate to assess this unit concurrently with relevant teamwork and communication units.

It would be expected that a person undertaking this competency would have completed or be able to demonstrate competence in the following unit of competency before undertaking this unit:

- PMAOHS212 Undertake first response to fire incidents
- PMAOHS213 Undertake fire control and emergency rescue.

Essential knowledge

Knowledge and understanding of the process sufficient to recognise emergency situations and then determine an action that is appropriate within operating guidelines and the scope of their responsibilities and competencies. It would be expected that a person would be able to communicate with team members the nature and extent of the emergency and provide the actions required.

A person undertaking this competency must be able to demonstrate knowledge of:

- characteristics of fires and fuel types
- hazard identification, assessment and control of risk
- principles and procedures of self contained breathing apparatus (SCBA)
- search and rescue techniques (including self rescue techniques)
- relevant facility fire management and safety systems
- communication systems
- emergency response plans
- teamwork principles and techniques.

Key competencies

1 Collect, analyse and organise information	**2** Communicate ideas and information	**3** Plan and organise activities	**4** Work with others and in teams	**5** Use mathematical ideas and techniques	**6** Solve problems	**7** Use technology
3	3	3	3	1	3	2

Unit title

PMAOHS312A Command the operation of survival craft

Unit descriptor

Operations technicians undertaking offshore operations can sometimes require evacuation involving the use of water craft and survival at sea. Due to the isolation of offshore installations and facilities, offshore evacuation procedures involve significant differences from standard onshore evacuation procedures. An essential part of this offshore evacuation process is the use of *totally enclosed motorised personnel survival craft* (TEMPSC) to facilitate the removal of personnel from an unsafe or threatened facility.

Installations and facilities can include:

- offshore rig/installation
- floating production platforms.

Some operations technicians will be allocated responsibility for the coordination and supervision of the evacuation process. These personnel would:

- coordinate and facilitate the assembly, boarding and launch of TEMPSC
- operate communications and navigation systems
- operate, manoeuvre and navigate TEMPSC to facilitate safe evacuation and recovery of personnel.

Generally the operations technician would be part of a team. However in an emergency they may be expected to be capable of performing all parts of this unit on an individual basis.

Prerequisites

This unit **has no** prerequisites.

Element	Performance criteria
1. Control muster.	1.1 Convey information from the control centre concerning the nature and scope of the emergency 1.2 Confirm and verify personnel gathered at the muster point against current person-on-board lists 1.3 Confirm personnel and craft readiness status with the incident controller 1.4 Maintain control of the muster point in order to ensure that an orderly and safe evacuation is achieved.

2. Conduct organised deployment of TEMPSC.	2.1 Direct mustered personnel to board the craft to procedures 2.2 Check all personnel to ensure that they are safely secured within craft and all required safety equipment has been verified as operational prior to launch 2.3 Launch craft to procedure, ensuring the safety of all personnel is maintained during the launch 2.4 Manoeuvre the launched craft away from the facility/ installation to a predetermined location, safe holding area or distance 2.5 Utilise all equipment to assist in the safe operation of the craft 2.6 Communicate with nominated agencies and services in order to convey the position and condition of craft and personnel and to assist in the recovery of the craft.
3. Provide leadership in TEMPSC deployment and welfare of personnel.	3.1 Take command of the TEMPSC and oversight the welfare and safety of those on board 3.2 Determine disposition of personnel within the TEMPSC and see to the allocation of resources 3.3 Communicate with other survival craft and base station in order to facilitate self rescue and recovery of others in the affected area 3.4 Prepare craft and personnel for safe recovery by the appropriate methods.
4. Control hazards.	4.1 Identify hazards arising from the abandonment 4.2 Assess the risks arising from those hazards 4.3 Implement measures to control those risks in line with procedures and duty of care.
5. Respond to problems.	5.1 Identify possible problems 5.2 Determine problems needing action 5.3 Determine possible problem causes 5.4 Rectify problem using appropriate solution within area of responsibility 5.5 Follow through items initiated until final resolution has occurred 5.6 Report problems outside area of responsibility to designated person.

Range of variables

Context

This unit of competency includes all such items of equipment and unit operations which form part of the evacuation procedure including:

- totally enclosed motorised personnel survival craft (TEMPSCs)
- launch and retrieval systems.

Typical problems for your installation may include:

- a range of weather conditions

- communication systems failures
- malfunctioning equipment
- unaccounted for personnel
- launching difficulties.

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

Assessment context and methods

Assessment for this unit of competency will be in a simulated environment. The unit will be assessed in as holistic a manner as is practical and may be integrated with the assessment of other relevant units of competency. Assessment will occur over a range of situations which will include disruptions to normal and planned operation.

Simulation should be based on survival craft and launching systems relevant to the particular facility/installation and will include walk throughs of the relevant competency components. Simulations may also include the use of case studies/scenarios, role plays and 3D virtual reality interactive systems.

This unit of competency requires an application of the knowledge contained in the use of survival craft and their integral equipment, to the level needed to maintain control and recognise and resolve problems. This can be assessed through questioning and the use of what if scenarios both on the plant (during demonstration of normal operations and walk throughs of abnormal operations) and off the plant.

Critical aspects

Competence must be demonstrated in the ability to recognise and analyse potential situations requiring action and then in implementing appropriate corrective action. The emphasis should be on the ability to stay out of trouble rather than on recovery from a disaster.

Consistent performance should be demonstrated. In particular look to see that:

- application of emergency response plans and procedures, evacuation procedures and alarms is in accordance with procedures
- there is control and coordination of evacuation muster activities
- safe and timely initiation of facility evacuation activities occurs
- operation, including navigation and safe handling of emergency craft conforms to established emergency response.

These aspects may be best assessed using a range of scenarios/case studies/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, unusual and improbable 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.

Resource implications

Assessment will require access to an operating TEMPSC which must be available and equipped for deployment. A bank of scenarios/case studies/what ifs will be required as will a bank of questions which will be used to probe the reasoning behind the observable actions.

Other assessment advice

In all facilities it may be appropriate to assess this unit concurrently with:

- PMAOPS228 Apply sea survival techniques.

Essential knowledge

The knowledge referred to in the evidence guide for this unit includes:

- principles involved in the launching, handling and recovery of survival craft
- factors needing to be taken into account during the operation of survival craft in all types of weather conditions
- operation of all equipment normally contained within a survival craft.
- emergency response plans and procedures
- evacuation procedures and alarms
- all items on a schematic of the facility or installation layout
- safety equipment and survival craft locations (TEMPSC).
- procedures for loss of command situations.

Competence also includes the ability to isolate the causes of problems to an item of equipment within the emergency evacuation system and to distinguish between causes of problems/alarm/fault indications such as:

- communications equipment problems
- location beacon malfunctions
- listing or other floatation difficulties
- mechanical failures.

Key competencies

1 Collect, analyse and organise information	**2** Communicate ideas and information	**3** Plan and organise activities	**4** Work with others and in teams	**5** Use mathematical ideas and techniques	**6** Solve problems	**7** Use technology
2	3	3	3	1	2	2

Unit title

PMAOHS320B Provide advanced first aid response

Unit descriptor

This competency unit deals with the provision of advanced first aid response, life support, management of casualty(s), the incident and other first aiders, until the arrival of medical or other assistance, and provision of support to other providers.

Prerequisites

This unit **has** the prerequisite of:

- PMAOHS220A Provide initial first aid response.

Element	Performance criteria
1. Assess the situation.	1.1 Identify physical hazards and minimise according to OHS requirements and workplace procedures 1.2 Assess risks to first aider and others and determine appropriate response to ensure prompt control of situation 1.3 Ascertain and prioritise need for emergency services/medical assistance and undertake triage where required 1.4 Deploy resources to appropriate locations as required in accordance with workplace procedures.
2. Manage the casualty(s).	2.1 Seek agreement for management of the casualty's injury/illness from person(s) where relevant 2.2 Determine welfare procedure and implement according to casualty's needs 2.3 Control effects of injury and determine appropriate first aid management to meet the needs of the casualty and situation 2.4 Administer medication according to relevant legislation and manufacturers/suppliers instructions and subject to casualty's regime 2.5 Monitor and respond to casualty(s) condition in a timely manner in accordance with effective first aid principles 2.6 Correctly operate life support equipment where appropriate according to relevant legislation and manufacturers/suppliers instructions 2.7 Finalise management according to casualty(s) needs and first aid principles.

Element	Performance criteria
3. Coordinate first aid activities until arrival of medical assistance.	3.1 Identify available resources and establish communication links with appropriate personnel emergency management services and medical assistance as appropriate 3.2 Deploy correct amount of resources to appropriate locations in an effective manner to ensure timely arrival of required resources 3.3 Document provision of resources and recommend modifications 3.4 Monitor management of casualties in accordance with first aid principles and workplace procedures 3.5 Coordinate evacuation of casualties according to worksite evacuation procedures 3.6 Arrange support service for personnel involved in the incident in accordance with workplace principles and procedures.
4. Communicate essential incident details.	4.1 Maintain communication with relevant personnel using appropriate media and equipment 4.2 Communicate first aid information with other providers/carers as appropriate to meet their needs and in accordance with workplace procedures 4.3 Provide information calmly to reassure casualty, adopting a communication style to match the casualty's level of consciousness.

Range of variables

Context

First aid management will need to account for:

- workplace policies and procedures
- industry/site specific regulations, codes etc
- occupational health and safety requirements
- State and Territory workplace health and safety requirements
- allergies the casualty may have.

Physical hazards may include:

- workplace hazards
- environmental hazards
- proximity of other people
- hazards associated with the casualty management process.

Risks may include:

- worksite equipment, machinery and substances
- first aid equipment (oxygen cylinders, defibrillator)
- environmental risks
- bodily fluids

- risk of further injury to the casualty
- risks associated with the proximity of other workers and bystanders.

Casualty's condition is managed for:

- abdominal injuries
- allergic reactions
- bleeding
- burns — thermal, chemical, friction, electrical
- cardiac conditions
- chemical contamination
- cold injuries
- crush injuries
- dislocations
- drowning
- envenomation — snake, spider, insect and marine bites
- environmental conditions such as hypothermia, dehydration, heat stroke
- epilepsy, diabetes, asthma and other medical conditions
- eye injuries
- fractures
- head injuries
- insect/marine bites
- minor skin injuries
- neck and spinal injuries
- needle stick injuries
- poisoning and toxic substances
- respiratory management of asthma and/or choking
- shock
- smoke inhalation
- soft tissue injuries including sprains, strains, dislocations
- substance abuse, illicit drugs
- unconsciousness including not breathing and no pulse.

First aid management may include:

- administration of analgesic gases
- cardiopulmonary resuscitation (CPR)
- infection control
- semi-automatic external defibrillator (SAED)
- expired air resuscitation (EAR).

First aid management will need to account for:

- location and nature of the workplace
- the environmental conditions eg, electricity, biological risks, weather, motor vehicle accidents
- location of emergency service personnel
- the use and availability of first aid equipment and resources
- infection control.

Medication may include:

- oxygen
- pain relief — paracetamol in accordance with State and Territory legislation, analgesics (penthrane, entonox — used in mining industry)
- asthma — aerosol bronchodilators: casualty's own or from first aid kit in accordance with State and Territory legislation
- severe allergic reactions — adrenaline: subject to casualty's own regime

- heart attack — aspirin.

Resources and equipment are used appropriate to the risk to be met and may include:

- blood pressure cuff
- oxygen resuscitation/cylinders
- defibrillation units
- pressure bandages
- thermometers
- injections
- backboards
- stretchers
- soft bag resuscitator
- first aid kits
- eyewash
- thermal blankets
- pocket face masks
- rubber gloves
- dressing
- spacer device
- cervical collars.

Communication systems may include but not be limited to:

- mobile phones
- satellite phones
- HF/VHF radio
- flags
- flares
- two way radio
- email
- electronic equipment.

Documentation may include:

- time
- fluid intake/output
- blood
- vomit
- faeces
- urine
- administration of medication including: time, date, person administering, dose
- vital signs.

Established first aid principles include:

- checking the site for danger to self, casualty and others and minimising the danger

- checking and maintaining the casualty's airway, breathing and circulation.

Evidence guide

Assessment context and methods

Assessment for this unit of competency will be on an operating plant. The unit will be assessed in as holistic a manner as is practical and may be integrated with the assessment of other relevant units of competency.

Assessment will occur over a range of situations that will include disruptions to normal, smooth operation.

Where applicable, assessment should replicate workplace conditions as far as possible. Where, for reasons of safety, access to equipment and resources and space, assessment takes place away from the workplace, simulations should be used to represent workplace conditions as closely as possible. Consistency of performance should be maintained over the required range of workplace situations until renewal of competence/licence is required by the industry/organisation.

Critical aspects

Competence may be demonstrated working individually, under supervision or as part of a first aid team.

Resource implications

Assessment will require access to an operating plant over an extended period of time, or a suitable method of gathering evidence of operating ability over a range of situations. A bank of scenarios/case studies/what ifs will be required as will a bank of questions which will be used to probe the reasoning behind the observable actions.

Other assessment advice

In all plants it may be appropriate to assess this unit concurrently with relevant teamwork and communication units.

In a major hazard facility, it may be appropriate to assess this unit concurrently with:

- PMAOHS300 Implement and monitor OHS policies and procedures
- PMAENV300 Implement and monitor environmental policies.

Essential knowledge

Knowledge and understanding of basic life support measures sufficient to recognise emergency situations and then determine appropriate action within the scope of their responsibilities and competencies.

The following knowledge should be demonstrated in assessment:

- occupational health and safety legislation and regulations
- legal responsibilities and duty of care
- basic anatomy and physiology
- respiratory/circulatory system
- how to gain access to and interpret material safety data sheets (MSDSs)
- company standard operating procedures (SOPs)
- debriefing counselling procedures
- dealing with social problems and confidentiality

- capabilities of emergency management services
- knowledge of the first aiders' skills and limitations.

The specific injuries/illnesses managed should be identified according to the workplace/environmental needs of the workplace and the range of variables listed in this unit.

Evidence should demonstrate the following skills:

- resuscitation
- the use of semi automated defibrillator
- delivery of oxygen
- demonstration of first aid principles
- adequate infection control procedures
- safe manual handling
- consideration of the welfare of the casualty
- initial casualty assessment
- report preparation
- communication skills
- incident management skills
- ability to interpret and use listed documents.

Underpinning knowledge and skills:

- basic anatomy — skeleton, muscles, joints, bones
- basic physiology
- basic toxicology
- transport techniques
- assertiveness skills
- communication skills
- leadership
- decision making
- legal requirements
- duty of care
- infection control
- resuscitation
- bleeding control
- airway management
- care of unconscious
- State and Territory regulatory requirements relating to currency of skill and knowledge.

Key competencies

1 Collect, analyse and organise information	**2** Communicate ideas and information	**3** Plan and organise activities	**4** Work with others and in teams	**5** Use mathematical ideas and techniques	**6** Solve problems	**7** Use technology
3	3	3	3	2	3	2

Unit title

PMAOHS321A Provide first aid response in remote and/or isolated area

Unit descriptor

This competency unit deals with working in a remote and/or isolated area to provide first aid response, life support and management of casualty(s), until evacuation of the casualty(s) by emergency services.

Prerequisites

This unit **has** the prerequisite of:

- PMAOHS220A Provide initial first aid response.

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Element	Performance criteria
1. Identify possible contingencies at remote/ isolated area.	1.1 Undertake preparation for isolated travel or work accounting for expected contingencies according to procedures/policies.
2. Handle casualty's immediate condition.	2.1 Assess casualty's condition and determine appropriate response in order to minimise hazards and determine need for medical assistance 2.2 Monitor and respond to casualty's condition in accordance with effective first aid principles 2.3 Reassure and support casualty during the wait for medical assistance 2.4 Ensure and determine casualty's comfort by establishing and explaining the nature of the illness/injury and the management procedures 2.5 Undertake to prove shelter from elements in accordance with environmental conditions.
3. Liaise with external medical support.	3.1 Document condition of the casualty over time to assist on-going management 3.2 Establish communication links to medical services to ensure prompt control action is undertaken 3.3 Undertake administration of medication under medical instruction, using relevant communication equipment 3.4 Evaluate environmental and casualty's condition to determine transportation of casualty to medical assistance 3.5 Provide assistance in the evacuation of casualty by emergency services as required.

Element	Performance criteria
4. Evaluate the incident.	4.1 Evaluate management of the incident and where required develop an action plan in consultation with relevant parties 4.2 Participate in debriefing/evaluation to improve future operations and address individual's needs 4.3 Provide access to bona fide critical stress facilitators where required/requested 4.4 Implement site management/procedures and evaluate in accordance with risk assessment 4.5 Formulate contingency planning and review to identify and select alternative management principles.

Range of variables

Context

First aid management will need to account for:

- workplace policies and procedures
- industry/site specific regulations, codes etc
- occupational health and safety requirements
- State and Territory workplace health and safety requirements
- allergies the casualty may have.

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Physical hazards may include:

- workplace hazards
- environmental hazards
- hazards associated with the casualty management process.

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Risks may include:

- worksite equipment, machinery and substances
- first aid equipment (oxygen cylinders, defibrillator)
- environmental risks
- bodily fluids
- risk of further injury to the casualty
- risks associated with the proximity of other workers and bystanders.

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Casualty's condition is managed for:

- abdominal injuries
- allergic reactions
- bleeding
- burns — thermal, chemical, friction, electrical
- cardiac conditions
- chemical contamination
- eye injuries
- fractures
- head injuries
- insect/marine bites
- minor skin injuries
- neck and spinal injuries
- needle stick injuries

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- cold injuries
- crush injuries
- dislocations
- drowning
- envenomation — snake, spider, insect and marine bites
- environmental conditions such as hypothermia, dehydration, heat stroke
- epilepsy, diabetes, asthma and other medical conditions
- poisoning and toxic substances
- respiratory management of asthma and/or choking
- shock
- smoke inhalation
- soft tissue injuries including sprains, strains, dislocations
- substance abuse, illicit drugs
- unconsciousness including not breathing and no pulse.

First aid management may include:

- administration of analgesic gases
- cardiopulmonary resuscitation (CPR)
- infection control
- semi-automatic external defibrillator (SAED)
- expired air resuscitation (EAR).

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First aid management will need to account for:

- location and nature of the workplace
- the environmental conditions eg, electricity, biological risks, weather, motor vehicle accidents
- location of emergency service personnel
- the use and availability of first aid equipment and resources
- infection control.

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Medication may include:

- oxygen
- pain relief — paracetamol in accordance with State and Territory legislation, analgesics (penthrane, entonox — used in mining industry)
- asthma — aerosol bronchodilators: casualty's own or from first aid kit in accordance with state and territory legislation
- severe allergic reactions — adrenaline: subject to casualty's own regime
- heart attack — aspirin.

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Resources and equipment are used appropriate to the risk to be met and may include:

- blood pressure cuff
- oxygen resuscitation/cylinders
- defibrillation units
- pressure bandages
- thermometers
- injections
- backboards

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- stretchers
- soft bag resuscitator
- first aid kits
- eyewash
- thermal blankets
- pocket face masks
- rubber gloves
- dressing
- spacer device
- cervical collars.

Communication systems may include but not be limited to:

- mobile phones
- satellite phones
- HF/VHF radio
- flags
- flares
- two way radio
- email
- electronic equipment.

Preparation for travel may include:

- selection of relevant communication equipment
- relevant first aid supplies and resources to cater for environmental conditions.

Consideration to travel or wait would depend upon:

- severity of injury
- time required for medical assistance to arrive
- movement might hinder rescue procedures.

Documentation may include:

- time
- fluid intake/output
- blood
- vomit
- faeces
- urine
- administration of medication including: time, date, person administering, dose
- vital signs.

Established first aid principles include:

- checking the site for danger to self, casualty and others and minimising the danger
- checking and maintaining the casualty's airway, breathing and circulation.

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Evidence guide

Assessment context and methods

Assessment for this unit of competency will be on an operating plant. The unit will be assessed in as holistic a manner as is practical and may be integrated with the assessment of other relevant units of competency.

Assessment will occur over a range of situations that will include disruptions to normal, smooth operation.

Where applicable, assessment should replicate workplace conditions as far as possible. Where, for reasons of safety, access to equipment and resources and space, assessment takes place away from the workplace, simulations should be used to represent workplace conditions as closely as possible. Consistency of performance should be maintained over the required range of workplace situations until renewal of competence/licence is required by the industry/organisation.

Critical aspects

Competence may be demonstrated working individually, under supervision or as part of a first aid team.

Resource implications

Assessment will require access to an operating plant over an extended period of time, or a suitable method of gathering evidence of operating ability over a range of situations. A bank of scenarios/case studies/what ifs will be required as will a bank of questions which will be used to probe the reasoning behind the observable actions.

Other assessment advice

In all plants it may be appropriate to assess this unit concurrently with relevant teamwork and communication units.

Essential knowledge

Knowledge and understanding of basic life support measures sufficient to recognise emergency situations and then determine appropriate action within the scope of their responsibilities and competencies.

The following knowledge should be demonstrated in assessment:

- occupational health and safety legislation and regulations
- legal responsibilities and duty of care
- basic anatomy and physiology
- respiratory/circulatory system
- how to gain access to and interpret material safety data sheets (MSDSs)
- company standard operating procedures (SOPs)
- debriefing counselling procedures
- dealing with social problems and confidentiality
- capabilities of emergency management services
- knowledge of the first aiders' skills and limitations.
- The specific injuries/illnesses managed should be identified according to the workplace/environmental needs of the workplace and the range of variables listed in this unit.

Evidence should demonstrate the following skills:

- resuscitation
- the use of semi automated defibrillator
- delivery of oxygen
- demonstration of first aid principles
- adequate infection control procedures
- safe manual handling
- consideration of the welfare of the casualty
- initial casualty assessment
- report preparation
- communication skills
- incident management skills
- ability to interpret and use listed documents.

Underpinning knowledge and skills:

- basic anatomy — skeleton, muscles, joints, bones
- basic physiology
- basic toxicology
- transport techniques
- assertiveness skills
- communication skills
- leadership
- decision making
- legal requirements
- duty of care
- infection control
- resuscitation
- bleeding control
- airway management
- care of unconscious
- State and Territory regulatory requirements relating to currency of skill and knowledge.

Key competencies

1 Collect, analyse and organise information	**2** Communicate ideas and information	**3** Plan and organise activities	**4** Work with others and in teams	**5** Use mathematical ideas and techniques	**6** Solve problems	**7** Use technology
3	3	3	3	2	3	2

Unit title

PMAOMIR301A Undertake initial rescue

Unit descriptor

This unit of competence applies to a person who is required to effect an initial rescue arising from an incident on or off-shore. It could apply to any person operating as a team member in a facility and may involve a confined space. This person might typically respond to an incident team leader once the incident is declared.

In a typical scenario, a person undertaking a task in a workplace may witness an incident involving a co-worker, or may be alerted to a difficulty involving a co-worker. In these few initial critical minutes before other help arrives, the actions of the person may have a significant effect on the wellbeing of their co-worker.

At no time however should the person take any action which is likely to cause them to be equally placed at risk.

Key aspects of the competence include:

- making the correct decisions concerning the initial actions to be taken
- taking the correct actions in the right sequence
- utilising all the available recourses
- obtaining the necessary assistance

The person may:

- evaluate the situation before taking any action
- use appropriate methods to assist the person to be rescued
- raise the alarm and alert others
- use the correct equipment in effecting the rescue

This person may be operating under a permit to work but would immediately contact other members of the team, other teams, management and possibly external emergency services as the circumstances and procedures allow.

Note: This competency does **not** cover the requirements to undertake comprehensive vertical, technical or confined space rescue, each of which may require the possession of:

- PUASAR004A Undertake vertical rescue
- PUASAR003A Undertake technical rescue
- PUASAR005A Undertake confined space rescue;

as described in the Public Safety Training Package PUA00.

Prerequisites

This unit **has** the prerequisites of:

- PMAOHS216B Operate breathing apparatus
- PMAPER205B Enter confined space
- PMAOHS220A Provide initial first aid response
- PMAOMIR217A Gas test atmospheres
- PMAPER200C Work in accordance with an issued permit

Element	Performance criteria
1. Respond to the incident surroundings.	1.1. Check the surroundings for signs of any hazards 1.2. Ascertain the condition of the person by visual and auditory means 1.3. Check that the person is wearing any prescribed PPE or harnesses 1.4. Test the atmosphere for safe, breathable air 1.5. Raise the alarm or alert other team members to the situation
2. Determine the condition of the person.	2.1. Communicate with the person to check on their condition if possible 2.2. Check the ability of the person to move unassisted 2.3. Gain access to the person providing using appropriate techniques if safe to do so 2.4. Check the person's condition and vital signs and the extent of any injuries 2.5. Determine whether the person can be moved and any obstacles that may need to be overcome
3. Determine the appropriate rescue method	3.1. Consider the condition of the person to be rescued 3.2. Consider the time since the occurrence of the incident 3.3. Consider the options for rescue and choose that most suitable for a single person rescue 3.4. Discontinue rescue efforts if it is evident that the rescue is beyond the your current capabilities 3.5. Make the person as comfortable as possible 3.6. Seek the assistance of rescue or emergency team members Note: If rescue efforts are discontinued go to Element 5
4. Use specialised rescue equipment	4.1. Select the appropriate rescue equipment compatible to the rescue method 4.2. Use rescue equipment to effect a rescue in accordance with manufacturers specification and organisational procedures
5. Convey information to other persons	5.1. Frequently and critically monitor the person during the rescue attempt 5.2. Convey information concerning the affected person to arriving team members 5.3. Convey information concerning the surrounding environment to team members 5.4. Communicate with emergency team leader and advise progress of rescue

Element	Performance criteria
6. Effect rescue if within your capabilities	6.1. Consider local circumstances and effect rescue in the light of those circumstances 6.2. Use appropriate methods to remove person from incident location 6.3. Monitor the condition of the person once removed from immediate danger or incident area 6.4. Continue to communicate the need to obtain assistance in the event assistance has not arrived 6.5. Assist person affected by the incident to acquire necessary medical or other attention 6.6. Hand person over to appropriate individual for further attention
7. Complete incident reports	7.1. Provide a verbal briefing to incident manager giving any details of injuries or ongoing unsafe conditions 7.2. Complete incident report in accordance with organisational procedures 7.3. Report any injuries or trauma effecting self and seek appropriate support 7.4. Suggest any measures to control the risks in the incident area in accordance with procedures and duty of care.
8. Recommend improvements to the rescue process	8.1. Identify possible problems in rescue equipment or process 8.2. Identify problems needing action 8.3. Identify possible causes 8.4. Recommend appropriate solutions within area of responsibility 8.5. Report problems outside area of responsibility to designated person.

Range of variables

Context

This unit of competency includes all such items of equipment and workplace activity which forms part of the incident response system. For your work environment this may include (select relevant items):

- atmosphere testing equipment
- ladders
- lifting tackle
- slings and harnesses
- tripods
- stretchers
- other equipment integral to the rescue operation.

Typical problems for your facility may include:

- unsafe working conditions
- faulty or defective equipment

- lack of appropriate safety equipment on hand
- inappropriate work procedures
- lack of attention

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

Assessment context and methods

Assessment for this unit of competency will be by way of simulation or observation under incident conditions. The unit will be assessed in as holistic a manner as is practical and may be integrated with the assessment of other relevant units of competency. Assessment will occur over a range of situations which can include a variety of incident circumstances.

Simulations must, as closely as possible, approximate actual incident conditions and should be based on the actual facility. Assessments should include walk throughs of the relevant competency components and may include the use of case studies/scenarios and role plays.

This unit of competency requires a significant body of knowledge which will be assessed through questioning and the use of 'what if' scenarios both in the facility (during demonstration of normal operations and walk throughs of abnormal operations) and off the site.

Critical aspects

Competence must be demonstrated in the ability to recognise and analyse potential situations requiring action and then in implementing appropriate responsive action. The emphasis should be on the ability to deal effectively with the incident or to contribute effectively to the recovery from the incident.

Consistent performance should be demonstrated. In particular look to see that:

- incident responses are in accordance with prescribed company procedures
- correct incident response equipment (where required) is used appropriately
- the safety and/or successful recovery of the individual and others affected by the incident response is afforded priority in the actions taken
- actions taken do not inhibit incident response effectiveness or further contribute to the incident
- appropriate documentation including reports, journal entries, logs and/or clearances are completed in accordance with procedures

These assessment activities should include a range of problems, including new, unusual and improbable situations which may have been generated from past workplace incident history, incidents in similar workplaces around the world, hazard analysis activities and/or similar sources.

Resource implications

Assessment will require (1) access to an accurately simulated environment in the absence of an on-site incident environment, or (2) a suitable method of gathering evidence of responding ability over a range of situations.

A bank of scenarios/case studies/what ifs will be required as will a bank of questions which will be used to probe the reasoning behind the observable actions.

Other assessment advice

In all environments it may be appropriate to assess this unit concurrently with other relevant units.

Essential knowledge

The knowledge referred to in the evidence guide for this Unit includes:

- essential first aid practices
- safe working practices related to the type of plant and equipment being worked on
- essential rescue principles and techniques
- basic rescue equipment types and uses
- obligations and implications of the organisation's work permit system
- PPE and special purpose safety devices such as safety harnesses required for the task being undertaken
- emergency communications systems, their location and operation

Competence also includes the ability to isolate the causes of problems within the incident response system and to be able to distinguish between causes of problems indicated by:

- inability to call for assistance at the incident scene
- non-functional or non-responding safety equipment
- non-functional or non-responding rescue equipment

Key competencies

1 Collect, analyse and organise information	**2** Communicate ideas and information	**3** Plan and organise activities	**4** Work with others and in teams	**5** Use mathematical ideas and techniques	**6** Solve problems	**7** Use technology
1	1	1	2	1	2	1

Unit title

PMAOMIR302A Respond to a helideck incident

Unit descriptor

This unit applies to people operating in support of helicopter operations at a remote location or specialised helideck landing facility. In the event of an incident the person would undertake a front line role in rescue operations and damage control.

In a typical scenario, a person would facilitate the safe loading and unloading of personnel and cargo prior to or at the conclusion of a helicopter operation. With the occurrence of an emergency landing or aborted take-off the person would provide essential rescue and containment services.

Key aspects of the competence include:

- making correct judgements about the course of action to be followed
- focusing on the rescue and subsequent safety of personnel involved
- reducing the hazards applicable to the site
- containment or neutralising of any hazardous substances

The individual may:

- look for and rescue casualties
- contain any fire or neutralise any hazardous substances
- render the incident site safe following the incident

Generally the person would undertake initial actions of their own accord as an incident team member, however during an incident response they would respond to the incident team leader. At all times they would be cooperating with other members of the incident response team.

Prerequisites

This unit **has no** prerequisites:

Element	Performance criteria
1. Respond to the incident.	1.1. Raise the alarm 1.2. Identify hazards and personal injury risks associated with the incident 1.3. Take immediate action to initiate deluge system to provide for fire suppression if appropriate 1.4. Ensure blades and rotors have stopped moving before approaching the aircraft 1.5. Look for signs of movement in the aircraft and actions to initiate escape from the fuselage 1.6. Identify the safest path to and from the aircraft

Element	Performance criteria
2. Evacuate persons from the aircraft.	2.1. Select equipment to facilitate evacuation and rescue 2.2. Act to assist persons trying to exit the aircraft 2.3. Direct or assist persons to a safe area in accordance with the emergency response plan 2.4. Use appropriate rescue techniques and equipment to release entrapped persons 2.5. Assist rescued persons to the safe area
3. Provide assistance to evacuees	3.1. Ensure assistance is sought for evacuees 3.2. Assist to extinguish any burning clothing or equipment such as damaged life jackets 3.3. Assist to move evacuees as directed by the incident team leader or medical officer
4. Conclude incident activities.	4.1. Assist team members to contain any fires or spillage 4.2. Search for and alert the incident team leader of any collateral damage 4.3. Assist with recovery of any debris that poses a threat to safety, moving components as little as possible in the process 4.4. Seek personal medical attention or support as necessary 4.5. Assist to secure the site to facilitate investigation of the circumstances surrounding the incident
5. Complete incident debrief	5.1. Record any damage inflicted on the aircraft in rescuing personnel 5.2. Complete an incident report in accordance with organisational procedures 5.3. Participate in debriefing sessions conducted by the organisation's or external authority representatives 5.4. Identify any problems in equipment or process of responding to the incident

Range of variables

Context

This unit of competency includes all such items of equipment and workplace activity which forms part of the incident response system. For your work environment this may include (select relevant items):

- rescue equipment
- specialised tools for cabin entry
- fixed fire-fighting systems
- deluge systems
- portable fire extinguishers
- personal protective equipment

Typical problems for your facility might include:

- limited space in which to operate
- moving parts beyond the proximity of the helicopter fuselage
- flying debris

- heat, and limited vision due to smoke

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.

Relationship to Major Hazard Facility Legislation

Organisations within the Chemical, Hydrocarbons and Oil Refining industries may find themselves falling under the provisions of various Major Hazard Facilities legislation. In developing this unit consideration has been given to the requirements of Sections 8 and 9 of the National Standard For The Control Of Major Hazard Facilities [NOHSC:1014(2002)] and the National Code Of Practice For The Control Of Major Hazard Facilities [NOHSC:2016(1996)].

This unit will assist individuals to meet some of their obligations under the relevant State or Territory legislation. Responsibility for appropriate contextualisation and application of the unit to ensure compliance however, remains with the individual organisation.

Evidence guide

Assessment context and methods

Assessment for this unit of competency will be by way of simulation or observation under incident conditions. The unit will be assessed in as holistic a manner as is practical and may be integrated with the assessment of other relevant units of competency. Assessment will occur over a range of situations which can include a variety of incident circumstances.

Simulations must, as closely as possible, approximate actual incident conditions and should be based on the actual facility. Assessments should include walk throughs of the relevant competency components and may include the use of case studies/scenarios and role plays.

This unit of competency requires a significant body of knowledge which will be assessed through questioning and the use of ‘what if’ scenarios both in the facility (during demonstration of normal operations and walk throughs of abnormal operations) and off the site.

Critical aspects

Competence must be demonstrated in the ability to recognise and analyse potential situations requiring action and then in implementing appropriate responsive action. The emphasis should be on the ability to deal effectively with the incident or to contribute effectively to the recovery from the incident.

Consistent performance should be demonstrated. In particular look to see that:

- incident responses are in accordance with prescribed company procedures
- correct incident response equipment (where required) is used appropriately

- the safety and/or successful recovery of the individual and others affected by the incident response is afforded priority in the actions taken
- actions taken do not inhibit incident response effectiveness or further contribute to the incident
- appropriate documentation including reports, journal entries, logs and/or clearances are completed in accordance with procedures

These assessment activities should include a range of problems, including new, unusual and improbable situations which may have been generated from past workplace incident history, incidents in similar workplaces around the world, hazard analysis activities and/or similar sources.

Resource implications

Assessment will require (1) access to an accurately simulated environment in the absence of an on-site incident environment, or (2) a suitable method of gathering evidence of responding ability over a range of situations. A bank of scenarios/case studies/what ifs will be required as will a bank of questions which will be used to probe the reasoning behind the observable actions.

Other assessment advice

In all environments it may be appropriate to assess this unit concurrently with other relevant units.

Essential knowledge

The knowledge referred to in the evidence guide for this unit includes:

- type of aircraft and its construction
- aircraft hazards
- helideck emergency procedures
- fire-fighting strategies and tactics for aircraft incidents
- muster points and safe areas for evacuees

Competence also includes the ability to isolate the causes of problems within the incident response system and to be able to distinguish between causes of problems indicated by:

- defective or inoperable equipment
- inappropriate or confused response to the incident
- injury to helideck operator

Key competencies

1 Collect, analyse and organise information	**2** Communicate ideas and information	**3** Plan and organise activities	**4** Work with others and in teams	**5** Use mathematical ideas and techniques	**6** Solve problems	**7** Use technology
2	1	1	2	1	2	2

Unit title

PMAOMIR317A Facilitate search and rescue operations

Unit descriptor

This unit covers the competency to establish a local plan for interaction between an isolated facility and appropriate agencies, initiation of a muster, development of advice to assist the search and rescue, provide details of local weather, contact the search controller and activate incident response system. This person would typically respond to an incident coordinator.

The search and rescue operation may arise from an incident over land or sea. Such incidents could involve aircraft or vessels, or in some cases land searches.

Generally the person would be a senior technician, team leader or a manager and would need to liaise with all relevant internal and external personnel during the search and rescue.

Prerequisites

This unit **has no** prerequisites.

Element	Performance criteria
1. Establish a search and rescue plan related to the facility.	1.1. Identify possible search and ***rescue scenarios*** in liaison with relevant personnel 1.2. Identify ***relevant*** local (or other) ***agencies*** 1.3. Identify key contacts with relevant agencies 1.4. Liaise with relevant agencies to develop/review site/agency interaction plan(s) for a search and rescue 1.5. Assess plan(s) for operability and practicality 1.6. Assess proposed plans with relevant agencies for compatibility with each other and own systems 1.7. Negotiate and resolve conflicts 1.8. Ensure site emergency plans are consistent with agreed agency interaction plans.
2. Activate search and rescue plan.	2.1. Recognise that a search and rescue is required 2.2. Obtain ***information required*** by the procedures and determine relevant agency/agencies to contact 2.3. Contact relevant agency/agencies and activate search and rescue 2.4. Provide all relevant and available information to the agency 2.5. Activate site incident response system relevant to the incident.

Element	Performance criteria
3. Liaise with search and rescue agency/agencies.	3.1. Monitor local situation and advise agency of any relevant changes 3.2. Monitor search and rescue progress and provide relevant information to site incident response team 3.3. Advise relevant personnel in own organisation of progress 3.4. Negotiate issues with agency/agencies and own organisation 3.5. Determine the need for additional/different resources and negotiate their timely acquisition 3.6. Identify problems/potential problems with the search and rescue and develop solutions in liaison with the agency/agencies and own organisation.
4. Conclude search and rescue.	4.1. Negotiate a ***conclusion*** to the search and rescue with the agency/agencies and own organisation 4.2. Collect and preserve all relevant information 4.3. Debrief with relevant people involved 4.4. Complete reports as required 4.5. Identify items for improvement and take action to have improvements implemented/built into plans.

Range of variables

This unit does not involve the development of search and rescue plans, nor the conduct/ coordination of a search and rescue, but rather relates to the site/facility person who will need to provide organisation input to the specialist search and rescue organisations.
Rescue scenarios may include:

- lost plane/helicopter transporting crew
- lost supply vessel
- lost truck/vehicle
- individual or groups requiring rescue
- hazardous or non-hazardous goods

Relevant agencies may include:

- national maritime search and rescue
- SES
- police

Information required may include:

- last known position
- expected route and arrival and departure times
- local weather conditions
- relevant conditions at site such as landing facilities

Conclusion to a search and rescue may be because:

- object of search found and rescued
- agencies recommend search be called off

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.

Relationship to Major Hazard Facility Legislation

Organisations within the Chemical, Hydrocarbons and Oil Refining industries may find themselves falling under the provisions of various Major Hazard Facilities legislation. In developing this unit consideration has been given to the requirements of Sections 8 and 9 of the National Standard For The Control Of Major Hazard Facilities [NOHSC:1014(2002)] and the National Code Of Practice For The Control Of Major Hazard Facilities [NOHSC:2016(1996)].

This unit will assist individuals to meet some of their obligations under the relevant State or Territory legislation. Responsibility for appropriate contextualisation and application of the unit to ensure compliance however, remains with the individual organisation.

Evidence guide

Assessment context and methods

Assessment for this unit of competency will be by way of simulation (eg Search and Rescue Exercise — SAREX) or under incident conditions. The unit will be assessed in as holistic a manner as is practical and may be integrated with the assessment of other relevant units of competency. Assessment will occur over a range of situations which can include a variety of incident circumstances.

Simulations must, as closely as possible, approximate actual incident conditions and should be based on the actual facility. Assessments should include walk throughs of the relevant competency components and may include the use of case studies/scenarios and role plays.

This unit of competency requires a significant body of knowledge which will be assessed through questioning and the use of ‘what if’ scenarios both in the facility (during demonstration of normal operations and walk throughs of abnormal operations) and off the site.

Critical aspects

Competence must be demonstrated in the ability to recognise and analyse potential situations requiring action and then in implementing appropriate responsive action. The emphasis should be on the ability to deal effectively with the incident or to contribute effectively to the recovery from the incident.

Consistent performance should be demonstrated. In particular look to see that:

- communication links with agencies are established
- a log of relevant information is routinely maintained
- information required is able to be quickly accessed and communicated to relevant agency
- different agencies and their capabilities is known.

These assessment activities should include a range of problems, including new, unusual and improbable situations which may have been generated from past workplace incident history, incidents in similar workplaces around the world, hazard analysis activities and/or similar sources.

Resource implications

Assessment will require (1) access to an accurately simulated environment in the absence of an on-site incident environment, or (2) a suitable method of gathering evidence of responding ability over a range of situations. A bank of scenarios/case studies/what ifs will be required as will a bank of questions which will be used to probe the reasoning behind the observable actions.

Other assessment advice

In all facilities it may be appropriate to assess this unit concurrently with other relevant units

Essential knowledge

Competence includes an understanding of search and rescue techniques and the capability of relevant search and rescue agencies and platforms and the ability to recognise and resolve problems. In particular it includes and ability to:

- negotiate with relevant agencies
- access and collate information and determine information relevant to the search and rescue
- interpret the search and rescue plans for different agencies and determine interfaces with own organisation/site/facility
- keep required records before, during and after a search and rescue incident
- effectively communicate and consult with a range of individuals by a range of means including fax, telephone and face-to-face

Key competencies

1 Collect, analyse and organise information	**2** Communicate ideas and information	**3** Plan and organise activities	**4** Work with others and in teams	**5** Use mathematical ideas and techniques	**6** Solve problems	**7** Use technology
3	3	3	3	3	3	3

Unit title

PMAOMIR320A Manage incident response information

Unit descriptor

This unit covers the managing of information during an incident. This may well apply to all of the information coming into an incident response centre. The person would typically respond to the incident coordinator or incident manager.

In a typical scenario, the person must ensure that information is identified, recorded, analysed and acted upon according to the nature and impact of the information. For instance the numbers of personnel evacuated from an incident scene, their condition, location and contact details would be accurately collected, recorded and then reported to the incident team. In such a situation the families, media or the authorities may need to be accurately informed in the appropriate way and within an acceptable timeframe.

The person may undertake mathematical calculations, critical analysis and problem solving, (for instance the estimation of the length of time a tank may burn, based on the size and contents of the tank).

Key aspects of this competency include:

- capturing and retaining all information coming in from the incident
- sorting and prioritising of information
- analysing and interpreting information for trends and impacts
- forwarding key information to those who require it
- keeping track of people, activities and follow up actions
- maintaining a chronological record of events for future reference

The individual may be:

- aware of the information channels available and the information coming in
- able to analyse and prioritise information for support of the incident management process
- capable of processing the data to project future trends, impacts or directions of the incident
- able to communicate effectively with a wide range of personnel

Generally the person would be a team leader, manager or technical specialist and be part of an incident response team during the incident. At all times they would be liaising and cooperating with other members of the team. They may have an ongoing role for managing incident information and/or the incident information system.

Prerequisites

This unit **has no** prerequisites:

Element	Performance criteria
1. Identify incident information needs and sources.	1.1. Determine the information needs of stakeholders 1.2. Identify the sources of required information 1.3. Review information currently held/collected by the organisation to determine suitability and accessibility 1.4. Prepare processes to obtain information that is not available, suitable or accessible within the organisation.
2. Develop/review incident reporting system.	2.1. Ensure incident reporting system provides data relevant to the information needs 2.2. Ensure incident reporting procedures reflect required process 2.3. Arrange for training of people as required to use incident reporting system 2.4. Monitor use of incident reporting system and recommend improvements as required.
3. Collect and analyse data.	3.1. Collect timely and relevant data 3.2. Ensure data is suitable for analysis, interpretation and dissemination 3.3. Ensure an accurate chronological record of events is maintained 3.4. Analyse data to provide required information.
4. Record and report information.	4.1. Report required information and recommendations as required to all stakeholders 4.2. Store and retrieve data/information in an appropriate format using appropriate technology 4.3. Monitor the performance of the information system and recommend improvements as appropriate.

Range of variables

Context

This unit of competency includes collection and reporting of all data on incidents.

Stakeholders may include:

- personnel (employees, management on or off the site/plant/facility)
- incident coordination team and incident management team
- employee families
- authorities
- media
- community

Data may include:

- numbers and placement of internal personnel and incident equipment
- numbers and placement of external personnel and equipment
- information on casualties, personal details, location and condition
- quantities, nature and present condition of materials
- arrangement, condition and details of equipment and plant

Reports and reporting methods may include:

- incident information board
- regulatory reports
- media briefings
- information reports to management and workers
- recommendations and follow up reports on changes made

Analysis may include:

- application of statistical methods
- mathematical calculations
- critical analysis
- problem solving

Typical problems may include:

- sorting and prioritising data to seek the critical data
- difficulties in obtaining reliable data and information
- dealing with rumour and unsubstantiated information
- working in a stressful 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.

Relationship to Major Hazard Facility Legislation

Organisations within the Chemical, Hydrocarbons and Oil Refining industries may find themselves falling under the provisions of various Major Hazard Facilities legislation. In developing this unit consideration has been given to the requirements of Sections 8 and 9 of the National Standard For The Control Of Major Hazard Facilities [NOHSC:1014(2002)] and the National Code Of Practice For The Control Of Major Hazard Facilities [NOHSC:2016(1996)].

This unit will assist individuals to meet some of their obligations under the relevant State or Territory legislation. Responsibility for appropriate contextualisation and application of the unit to ensure compliance however, remains with the individual organisation.

Evidence guide

Assessment context and methods

Assessment for this unit of competency will be by way of simulation or observation under incident conditions. The unit will be assessed in as holistic a manner as is practical and may be integrated with the assessment of other relevant units of competency. Assessment will occur over a range of situations which can include a variety of incident circumstances.

Simulations must, as closely as possible, approximate actual incident conditions and should be based on the actual facility. Assessments should include walk throughs of the relevant competency components and may include the use of case studies/scenarios and role plays.

This unit of competency requires a significant body of knowledge which will be assessed through questioning and the use of 'what if' scenarios both in the facility (during demonstration of normal operations and walk throughs of abnormal operations) and off the site.

Critical aspects

Competence must be demonstrated in the ability to correctly interpret data and produce the required information.

Consistent performance should be demonstrated. In particular look to see that:

- all incident data is captured, recorded and available for stakeholders
- data is sorted, prioritised and analysed to provide timely updates for stakeholders
- reports are produced as required
- data is analysed to support the ongoing management of the incident
- chronological event recording is maintained for post incident review

These assessment activities should include a range of problems, including new, unusual and improbable situations which may have been generated from past workplace incident history, incidents in similar workplaces around the world, hazard analysis activities and/or similar sources.

Resource implications

Assessment will require (1) access to an accurately simulated environment in the absence of an on-site incident environment, or (2) a suitable method of gathering evidence of responding ability over a range of situations. A bank of scenarios/case studies/what ifs will be required as will a bank of questions which will be used to probe the reasoning behind the observable actions.

Other assessment advice

In all workplace environments it may be appropriate to assess this unit concurrently with relevant units.

Essential knowledge

Competence includes an understanding of the information needs of the organisation and the data which may be able to produce it. In particular it includes:

- information collection, collation
- analysis and display techniques
- information evaluation issues
- information storage requirements and methods
- reporting procedures of the organisation

Key competencies

1 Collect, analyse and organise information	**2** Communicate ideas and information	**3** Plan and organise activities	**4** Work with others and in teams	**5** Use mathematical ideas and techniques	**6** Solve problems	**7** Use technology
2	2	2	2	2	2	1

Unit title

PMAOMIR321A Manage communication systems during an incident

Unit descriptor

This unit covers the management and availability of effective communication systems during an incident. The person would typically respond to the incident coordinator or the incident manager.

In a typical scenario the person may estimate the communication needs and set about to provide them. Depending upon the nature of the incident, this may include a wide range of communication processes. It could for instance include the provision of a telephone centre to handle media requests, inquiries from families, and secure lines of communication between the incident centre and outside authorities.

The likelihood of the communications being disrupted by the incident would need to be planned and the provision of alternative radio communication equipment and facilities may be required.

Key aspects of the competence include:

- identifying the stakeholders and their communication needs
- provision of the communications systems required
- establishing the communication channels to keep the stakeholders linked
- being able to prioritise the needs and availability of resources.

The individual may:

- be able to prioritise and respond to requests and requirements
- be familiar with communication equipment and systems available
- be able to work in a stressful environment

Generally the individual would be part of an incident team during an emergency situation though may be required to take independent action. At all times they would be liaising and cooperating with the incident manager.

Prerequisites

This unit **has** no prerequisites:

Element	Performance criteria
1. Check existing communications systems	1.1. Check that the available communications systems are operable 1.2. Ensure that personnel are available and trained to use the existing facilities 1.3. Ensure that recording systems are in place to enable accurate recording of data.

Element	Performance criteria
2. Provide necessary communications systems	2.1. Identify stakeholders in the incident management process 2.2. Identify the communication needs of these stakeholders 2.3. Plan for the acquisition and deployment of the systems necessary to provide the communication needs 2.4. Acquire, set up and put into operation the communications systems as required 2.5. Allocate and train personnel as required to support the communication systems provided.
3. Prepare contingency plans	3.1. Review the incident information available to estimate possible future communication requirements 3.2. Prepare contingency plans for communication requirements, including all equipment, facilities, resources and people 3.3. Manage the contingency plan to ensure that systems are provided as required 3.4. Review and update the requirements throughout the incident.
4. Keep a record of the incident	4.1. Maintain a chronological record of the incident, the needs, resources and solutions as the incident progresses 4.2. Prepare a report, including recommendations for the future, at the conclusion of the incident
5. Control hazards concerned with the communications systems	5.1. Identify hazards in the work environment 5.2. Assess the risks arising from those hazards 5.3. Implement measures to control those risks in line with procedures and duty of care
6. Respond to problems	6.1. Identify possible problems in equipment or process 6.2. Determine which problems need action 6.3. Determine possible fault causes 6.4. Rectify problem(s) using appropriate solution(s) within area of responsibility 6.5. Follow through items initiated until final resolution has occurred 6.6. Report problems outside area of responsibility to designated person.

Range of variables

Context

This unit of competency includes all such items of equipment and unit operations which form part of the incident response system. In your facility this may include:

- telephone equipment (including handsets, switchboards, satellites and lines)
- mobile phones, fax machines, video conferencing, messaging/paging
- computers, internet, e-mail
- radio systems (HF, VHF)
- printers, copiers and supplies.

Typical problems for your facility may include:

- damage to existing infrastructure
- availability of equipment and resources
- lack of specialised and/or trained people
- volume of communications being received.

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.

Relationship to Major Hazard Facility Legislation

Organisations within the Chemical, Hydrocarbons and Oil Refining industries may find themselves falling under the provisions of various Major Hazard Facilities legislation. In developing this unit consideration has been given to the requirements of Sections 8 and 9 of the National Standard For The Control Of Major Hazard Facilities [NOHSC:1014(2002)] and the National Code Of Practice For The Control Of Major Hazard Facilities [NOHSC:2016(1996)].

This unit will assist individuals to meet some of their obligations under the relevant State or Territory legislation. Responsibility for appropriate contextualisation and application of the unit to ensure compliance however, remains with the individual organisation.

Evidence guide

Assessment context and methods

Assessment for this unit of competency will be by way of simulation or observation under incident conditions. The unit will be assessed in as holistic a manner as is practical and may be integrated with the assessment of other relevant units of competency. Assessment will occur over a range of situations which can include a variety of incident circumstances.

Simulations must, as closely as possible, approximate actual incident conditions and should be based on the actual facility. Assessments should include walk throughs of the

relevant competency components and may include the use of case studies/scenarios and role plays.

This unit of competency requires a significant body of knowledge which will be assessed through questioning and the use of 'what if' scenarios both in the facility (during demonstration of normal operations and walk throughs of abnormal operations) and off the site.

Critical aspects

Competence must be demonstrated in the ability to recognise and analyse potential situations requiring action and then in implementing appropriate responsive action. The emphasis should be on the ability to deal effectively with the incident or to contribute effectively to the recovery from the incident.

Consistent performance should be demonstrated. In particular look to see that:

- key communication channels are identified and maintained
- information is supplied to the key personnel involved in the incident
- appropriate documentation including reports, journal entries, logs and/or clearances are completed in accordance with procedures.

These assessment activities should include a range of problems, including new, unusual and improbable situations which may have been generated from past workplace incident history, incidents in similar workplaces around the world, hazard analysis activities and/or similar sources.

Resource implications

Assessment will require (1) access to an accurately simulated environment in the absence of an on-site incident environment, or (2) a suitable method of gathering evidence of responding ability over a range of situations. A bank of scenarios/case studies/what ifs will be required as will a bank of questions which will be used to probe the reasoning behind the observable actions.

Other assessment advice

In all plants it may be appropriate to assess this unit concurrently with relevant teamwork and communication units.

Essential knowledge

Competence includes an understanding of the communication needs of the organisation and the facilities and equipment which may be able to produce it. In particular it includes:

- details of the existing communication systems
- alternative communications systems, their suitability and availability
- contingency planning
- acquisition and provision of communications capability
- reporting procedures of the organisation.

Competence also includes the ability to isolate the causes of issues within the incident response system and to be able to distinguish between causes of issues indicated by:

- difficulties in operations and use of communications systems during an incident

- failure of equipment
- lack of suitably trained or specialised personnel.

Key competencies

1 Collect, analyse and organise information	**2** Communicate ideas and information	**3** Plan and organise activities	**4** Work with others and in teams	**5** Use mathematical ideas and techniques	**6** Solve problems	**7** Use technology
2	2	2	2	2	2	2

Unit title

PMAOMIR346A Assess and secure an incident site

Unit descriptor

This unit applies to a person who would typically be an incident team leader and who, following an incident, undertakes the inspection of the site and makes an initial assessment as to the immediate safety of the area. The incident team leader typically responds to the incident coordinator, who may be stationed in the incident room.

In a typical scenario, following the occurrence of an incident the person would take action to ensure the immediate incident site is safe and take steps to maintain facility safety, record details of the scene and preserve it from contamination. The person may also be required to manage the scene pending the arrival of appropriate authority or company representatives as required by company procedures, legislation or regulations. Incident scenes may be the consequences of:

- explosions
- loss of containment of hazardous materials
- environmental incidents
- hydrocarbons fires or releases of noxious or toxic gasses

The person would:

- ensure that the site is rendered safe and that access to the area is limited
- take steps to ensure the site is preserved intact
- ensure that site is isolated from ancillary processes to prevent secondary incidents
- note or record all pertinent details
- take statements or conduct interviews of witnesses

Generally the person would be part of a team during an investigation however may be required to take independent action. At all times they would be liaising and cooperating with other members of the organisation's incident management team.

Prerequisites

This unit **has** no prerequisites:

Element	Performance criteria
1. Secure and preserve the scene	1.1. Undertake an initial assessment of the site to identify factors which will impact on safety and scene preservation 1.2. Ensure that secondary incidents are prevented by isolating the site from associated or ancillary processes 1.3. Co-ordinate arrangements to secure the incident/accident site to preserve the site and maintain the safety of personnel in line with procedures 1.4. Restrict access to the site until the arrival of authorised company or external authority representatives

Element	Performance criteria
2. Record details of the incident site	2.1. Record details of the scene according to the organisation's policies and procedures 2.2. Note the status of any equipment in the incident area 2.3. Communicate information to relevant personnel in line with the procedures
3. Gather information	3.1. Record witness details and note any information given in accordance with procedures 3.2. Take statements from witnesses and record details of persons believed to be near the site prior to or during the incident 3.3. Develop an initial timeline of events leading up to the incident
4. Ensure safety when responding to an incident	4.1. Identify hazards 4.2. Assess the risks arising from those hazards 4.3. Implement measures to control those risks in line with procedures and duty of care
5. Respond to problems	5.1. Identify possible problems in equipment or process 5.2. Determine which problems need action 5.3. Determine possible fault causes 5.4. Rectify problem(s) using appropriate solution(s) within area of responsibility 5.5. Follow through items initiated until final resolution has occurred 5.6. Report problems outside area of responsibility to designated person

Range of variables

Context

This unit of competency includes all such items of equipment and unit operations which form part of the incident response system. In your facility this may include (select relevant items):

- note taking materials
- standard forms
- sketching materials
- photographic equipment
- taping or electronic videoing equipment
- non sparking or radio transmission equipment (where safety permits)

Examples of problems that may arise include:

- rescue equipment or personnel contaminating the site
- inherent site dangers from debris or damaged equipment
- weakened structures
- difficulties in maintaining communication
- explosive atmospheres

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.

Relationship to Major Hazard Facility Legislation

Organisations within the Chemical, Hydrocarbons and Oil Refining industries may find themselves falling under the provisions of various Major Hazard Facilities legislation. In developing this unit consideration has been given to the requirements of Sections 8 and 9 of the National Standard For The Control Of Major Hazard Facilities [NOHSC:1014(2002)] and the National Code Of Practice For The Control Of Major Hazard Facilities [NOHSC:2016(1996)].

This unit will assist individuals to meet some of their obligations under the relevant State or Territory legislation. Responsibility for appropriate contextualisation and application of the unit to ensure compliance however, remains with the individual organisation.

Evidence guide

Assessment context and methods

Assessment for this unit of competency will be by way of simulation or under incident conditions. The unit will be assessed in as holistic a manner as is practical and may be integrated with the assessment of other relevant units of competency. Assessment will occur over a range of situations which can include a variety of incident circumstances.

Simulations must, as closely as possible, approximate actual incident conditions and should be based on the actual facility. Assessments should include walk throughs of the relevant competency components and may include the use of case studies/scenarios and role plays.

This unit of competency requires a significant body of knowledge which will be assessed through questioning and the use of 'what if' scenarios both in the facility (during demonstration of normal operations and walk throughs of abnormal operations) and off the site.

Critical aspects

Competence must be demonstrated in the ability to correctly respond to incident situations and in implementing appropriate action. The emphasis should be on the ability to stay ahead of the problem rather than to have to take drastic action in order to recover the situation.

Consistent performance should be demonstrated. In particular look to see that:

- incident responses are in accordance with company procedures
- site is secured to preserve and maintain safety of personnel and restricted access
- the safety and/or successful recovery of the person and others affected by the incident response is afforded priority in the actions taken
- actions taken do not inhibit incident response effectiveness or further contribute to the incident
- appropriate documentation including reports, journal entries, logs and/or clearances are completed in accordance with procedures

These assessment activities should include a range of problems, including new, unusual and improbable situations which may have been generated from past workplace incident

history, incidents in similar workplaces around the world, hazard analysis activities and/or similar sources.

Resource implications

Assessment will require (1) access to an accurately simulated environment in the absence of an on-site incident environment, or (2) a suitable method of gathering evidence of responding ability over a range of situations. A bank of scenarios/case studies/what ifs will be required as will a bank of questions which will be used to probe the reasoning behind the observable actions.

Other assessment advice

In all workplace environments it may be appropriate to assess this unit concurrently with relevant units such as.

Essential knowledge

The knowledge referred to in the evidence guide for this Unit includes:

- methods of securing the site
- techniques for removing survivors and non-survivors from the area
- organisation requirements for taking witness details and information
- regulatory requirements for taking witness details and information
- legislative and organisation requirements relating to scene preservation
- types of information which may assist in investigations

Competence also includes the ability to isolate the causes of issues within the incident response system and to be able to distinguish between causes of issues indicated by:

- materials being moved from the site without approval
- vehicular or personal traffic contaminating the site
- personnel being injured or contaminated on the site
- loss of evidence from the site

Key competencies

1 Collect, analyse and organise information	**2** Communicate ideas and information	**3** Plan and organise activities	**4** Work with others and in teams	**5** Use mathematical ideas and techniques	**6** Solve problems	**7** Use technology
2	2	2	2	2	2	2

Unit title

PMAPER300C Issue work permits

Unit descriptor

This competency unit addresses the need for personnel who issue work permits to understand the permit system, know the limitations of each permit and make decisions regarding the need for and correct use of each permit. This competency unit excludes the issue of hot work and confined space work permits, however, sufficient knowledge regarding these permits is required to ensure the correct permit is issued.

Prerequisites

This unit **has** the prerequisite of:

- PMAOHS200A Participate in workplace safety procedures.

Element	Performance criteria
1. Identify need for work permit.	1.1 Understand work permit system
	1.2 Identify and confirm with appropriate personnel the need for work permit
	1.3 Identify the correct permit for each situation.
2. Prepare work site for authorised work.	2.1 Undertake an inspection of the worksite
	2.2 Identify OHS and environmental requirements
	2.3 Conduct hazard identification and risk assessment
	2.4 Prepare worksite in accordance with standard operating procedures and specified work permit conditions
	2.5 Check permit conditions and report to appropriate personnel
	2.6 Identify need for and carry out testing in accordance with standard operating procedures
3. Raise and issue work permits.	3.1 Ensure documentation of permit conditions
	3.2 Ensure appropriate testing carried out and results documented on permit
	3.3 Check that permit conditions are met (ie validate permit)
	3.4 Complete permit and follow procedures to authorise
	3.5 Ensure recipient(s) is advised of and understands requirements of permit
	3.6 Ensure recipient(s) signs permit

Element	Performance criteria
4. Monitor work for compliance.	4.1 Undertake regular site inspections 4.2 Monitor conditions and work progress and respond appropriately to changing conditions and circumstances 4.3 Ensure permit currency and revalidate as required 4.4 Ensure permit is displayed in prominent position 4.5 Identify and, act on incidences of non-compliance and report promptly to relevant personnel 4.6 Report any issues or equipment failures in accordance with procedures
5. Withdraw work permit.	5.1 Inspect job status 5.2 Check that work undertaken satisfies permit conditions 5.3 Ensure that worksite is ready for a safe return to working conditions 5.4 De-isolate, remove tags as appropriate 5.5 Sign off documentation in accordance with standard operating procedures and withdraw permit as appropriate 5.6 Communicate worksite and process status to relevant personnel.

Range of variables

Context

This competency is restricted to the issue of general work permits only.

The types of permit include:

- cold work
- excavation
- vehicle entry
- minor repairs
- working at heights
- other relevant permits (excluding hot work and confined space).

Indicative functions include:

- supervision/monitoring of contractors
- testing — types of testing include:
  - atmospheric including explosivity, flammability, toxicity
  - temperature
  - humidity
  - combustibles
  - oxygen — enriched or reduced
  - challenging/checking performance of monitoring and testing equipment against a standard sample
- compliance with legislation/codes including:

  - relevant OHS legislation, codes of practice and guidance material
  - EPA
  - National and Australian standards
  - licence and certification requirements
- verification of isolations and confirming removal of harmful sources of energies

Preparation of worksite includes:

- mechanical, electrical and process isolations
- de-energising all sources of energy/pressure
- purging of lines
- lock out/tag out procedures
- blinding/blanking lines

Requirements identified on the permit may include testing of atmospheric conditions, ventilation and control measures such as isolation, barriers, tag out/lockout signs, communications, incident response.

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

Safety structures and controls may include automatic plant shut down buttons, cords/lanyards, alarms, barriers, guards, earth leakage devices, tag out/lock out procedures, warning lights.

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

Assessment context and methods

Assessment for this unit of competency will be on an operating plant. The unit will be assessed in as holistic a manner as is practical and may be integrated with the assessment of other relevant units of competency. Assessment will occur over a range of situations which may include disruptions to normal, smooth operation.

Simulation may be required to allow for timely assessment of parts of this unit of competency. Simulation should be based on the actual plant and will include walk throughs of the relevant competency components. Simulations may also include the use of case studies/scenarios and role plays.

This unit of competency requires a significant body of knowledge which will be assessed through questioning and the use of what if scenarios both on the plant (during demonstration of normal operations and walk throughs of abnormal operations) and off the plant.

Critical aspects

Competence must be demonstrated in the ability to distinguish between situations requiring the major types of permits and to list the major requirements of each type of permit.

It is essential that competence is demonstrated in the ability to:

- correctly identify situations requiring work permits
- identify and apply legislative requirements, relevant standards and codes of practice (which may be incorporated in the organisation's procedures) to the issuing of work permits
- list the requirements of each type of permit
- plan own work process within workplace procedures and explain the reasons for the steps in the process.

Consistent performance should be demonstrated. In particular look to see that:

- correct permit issued
- hazards are identified and controlled in the permit by applying the hierarchy of control
- required PPE is specified
- problems are anticipated
- problems are efficiently resolved

These aspects may be best assessed using a range of scenarios/case studies/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.

Resource implications

Assessment will require access to an operating plant over an extended period of time, or a suitable method of gathering evidence of operating ability over a range of situations. A bank of scenarios/case studies/what ifs will be required as will a bank of questions which will be used to probe the reasoning behind the observable actions.

Other assessment advice

In all plants it may be appropriate to assess this unit concurrently with relevant teamwork and communication units.

Essential knowledge

Knowledge and understanding of the materials, equipment and process sufficient to recognise situations requiring different types of work permits and then implement the appropriate action.

Knowledge of the enterprise's standard procedures and work instructions and relevant regulatory requirements under which permit systems operate, along with the ability to implement them within appropriate time constraints and in a manner relevant to the job. Knowledge of the relevant requirements under AS2865

Competence includes the ability to:

- select appropriate PPE
- apply and/or explain:
  - types of permits and what they cover
  - hazards associated with each type of permit

- permit control system
- hazards of the area for which permit is being issued
- hazards that may be created by the interactions of the permit, the process and the plant area
- identification of container and goods coding and HAZCHEM markings
- production workflow sequences
- focus of operation of work systems and equipment
- application of relevant agreements, codes of practice and other legislative requirements
- hazards of the materials and process and appropriate hazard control procedures including hierarchy of control
- identification and correct use of equipment, processes and procedures
- conducting and interpreting tests for contaminant gases
- 'challenge' the calibration of testing equipment.

Some sources of underpinning OHS knowledge include appropriate OHS and Dangerous Goods legislation, Australian Standards and NOHSC/State or Territory codes such as:

- NOHSC:1010 — National Standard for Plant
- AS4024.1 Safeguarding of machinery — general principles
- NOHSC:1003 National exposure standards for atmospheric contaminants in the occupational environment

The regulatory framework to include:

- OHS
- EPA
- OHS authorities and NOHSC
- licence and certification requirements
- company policy and permit control systems
- other relevant standards.
- Issuing a permit for work in confined spaces requires competence in PMAPER302A Issue work permits (hot work/confined space).

Key competencies

1 Collect, analyse and organise information	**2** Communicate ideas and information	**3** Plan and organise activities	**4** Work with others and in teams	**5** Use mathematical ideas and techniques	**6** Solve problems	**7** Use technology
2	2	2	2	1	2	2

Unit title

PMAPER302B Issue work permits (hot work/confined space)

Unit descriptor

This competency unit addresses the need for personnel who issue work permits to understand the permit system, know the limitations of each permit and can make decisions regarding the need for and correct use of each permit. This competency unit is specific to the issue of hot work and confined space work permits, however, sufficient knowledge regarding all work permits is required to ensure the correct permit is issued.

Prerequisites

This unit **has** the prerequisite of:

- PMAOHS200A Participate in workplace safety procedures

Element	Performance criteria
1. Identify need for work permit.	1.1 Understand work permit system 1.2 Identify and confirm with appropriate personnel the need for work permit 1.3 Identify the correct permit for each situation.
2. Prepare work site.	2.1 Undertake an inspection of the worksite 2.2 Identify OHS and environmental requirements 2.3 Conduct hazard identification and risk assessment 2.4 Prepare worksite in accordance with standard operating procedures and specified work permit conditions 2.5 Check permit status conditions and report to appropriate personnel 2.6 Identify need for and carry out testing in accordance with standard operating procedures.
3. Raise and issue work permits.	3.1 Ensure documentation of permit conditions 3.2 Ensure appropriate testing carried out and results documented on permit 3.3 Check that permit conditions are met (ie validate permit) 3.4 Complete and authorise permit 5.7 Ensure recipient(s) is advised of and understands requirements of permit 3.5 Ensure recipient(s) signs permit.
4. Monitor work for compliance.	4.1 Undertake regular site inspections 4.2 Monitor conditions work progress and respond appropriately to changing conditions and circumstances 4.3 Ensure permit currency and revalidate as required 4.4 Ensure permit is displayed in prominent position 4.5 Identify and act on incidences of non-compliance and report promptly to relevant personnel 4.6 Report any issues or equipment failures in accordance

Element	Performance criteria
	with procedures.
5. Withdraw work permit.	5.1 Inspect job status
	5.2 Check that work undertaken satisfies permit conditions
	5.3 Ensure that worksite is ready for safe return to working conditions
	5.4 Sign off documentation in accordance with standard operating procedures and withdraw permit as appropriate
	5.5 Communicate worksite and process status to relevant personnel.

Range of variables

Context

This competency is restricted to hot work and confined space work permits.

A hot work permit is required when using equipment that generates heat, sparks, flames or other potential sources of ignition in an atmosphere that may be flammable.

This can include equipment such as:

- vehicle entry
- welders
- power tools.

The Australian standard definition given for confined space entry is used in this Training Package, *viz: AS2865*

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.

Examples include but may not be limited 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).

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

By contrast, any area where space is limited is referred to as 'restricted space'

Knowledge of the types of permit are to include:

- hot work
- confined space/confined space entry
- general permits to work
- other permits to work relevant to the work area.

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
- 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 (signs, barricades etc.)
- size of work crew
- stand-by personnel and emergency response & 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.

Where the permit is for hot work, and that hot work is welding, then the relevant standards for welding should be consulted and applied. These standards include:

- AS 1558-1973 Protective Clothing for Welders
- AS 1674.1-1997 Safety in Welding and Allied Processes, Part 1 Fire Precautions
- AS 1674.2-1990 Safety in Welding and Allied Processes, Part 2 Electrical
- AS 3195-1995 Approval and Test Specification-Portable Machines for Electric Arc Welding and Allied Processes
- AS 3957-1991 Light-Transmitting Screens and Curtains for Welding Operations.

Indicative functions include:

- supervision/monitoring of contractors
- testing — types of testing include:
  - atmosphere including explosivity, toxicity, breathability
  - temperature
  - humidity
  - toxicity
  - combustibles
  - oxygen — enriched or reduced
- compliance with legislation/codes including:
  - OHS
  - EPA
  - Worksafe/Workcover or equivalent State/Territory guidelines
  - licence requirements
- verification of isolations and confirming removal of harmful sources of energies

Preparation of worksite includes:

- mechanical, electrical and process isolations
- de-energising all sources of energy/pressure
- lock out/tag out procedures

Requirements identified on the permit may include testing of atmospheric conditions, ventilation and control measures such as isolation, barriers, tag out/lockout signs, communications, incident response.

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

Safety structures and controls may include automatic plant shut down buttons, cords/lanyards, alarms, barriers, guards, earth leakage devices, tag out/lock out procedures, warning lights.

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

Assessment context and methods

Training and assessment for this unit will comply with the requirements of AS2865, or its authorised update or replacement. This Standard requires that trainers and assessors of confined space competencies are themselves knowledgeable and experienced in confined space work and requirements for training according to relevant legislation and standards. The standard also requires that all persons with work related to confined spaces are reassessed at appropriate intervals to ensure ongoing competency to perform relevant work.

The unit will be assessed in as holistic a manner as is practical and may be integrated with the assessment of other relevant units of competency. Assessment will occur over a range of situations which may include disruptions to normal, smooth operation.

Simulation will be required for assessment of this unit of competency. Simulation should be based on the actual plant and will include walk throughs of the relevant competency components. Simulations may also include the use of case studies/scenarios and role plays.

This unit of competency requires a significant body of knowledge which will be assessed through questioning and the use of what if scenarios both on the plant (during demonstration of normal operations and walk throughs of abnormal operations) and off the plant.

Critical aspects

Competence must be demonstrated in the ability to distinguish between situations requiring the major types of permits and to list the major requirements of each type of permit. A greater emphasis should be placed on knowledge surrounding hot work and confined space permits.

It is essential that competence is demonstrated in the ability to

- correctly identify situations requiring work permits
- identify and apply legislative requirements, relevant standards and codes of practice (which may be incorporated in the organisation's procedures) to the issuing of work permits
- list the requirements of each type of permit

- plan own work process within workplace procedures and explain the reasons for the steps in the process.

Consistent performance should be demonstrated. In particular look to see that:

- correct permit issued
- hazards are identified and controlled in the permit by applying the hierarchy of control
- required PPE is specified
- problems are anticipated
- problems are efficiently resolved

These aspects may be best assessed using a range of scenarios/case studies/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.

Resource implications

A bank of scenarios/case studies/what ifs will be required as will a bank of questions which will be used to probe the reasoning behind the observable actions.

Other assessment advice

In all plants it may be appropriate to assess this unit concurrently with relevant teamwork and communication units.

Essential knowledge

Knowledge and understanding of the materials, equipment and process sufficient to recognise situations requiring work permits, with greater emphasis on hot work and confined space work permits, and then implementing the appropriate action.

Knowledge of the enterprise's standard procedures and work instructions and relevant regulatory requirements under which permit systems operate, along with the ability to implement them within appropriate time constraints and in a manner relevant to the job. Knowledge of the relevant requirements under AS2865.

Competence includes the ability to:

- select appropriate PPE
- apply and/or explain:
  - Australian Standard AS2865 — Safe working in a confined space
  - types of permits and what they cover
  - hazards associated with each type of permit
  - permit control system
  - hazards of the area for which permit is being issued
  - hazards that may be created by the interactions of the permit, the process and the plant area
  - interpretation of container and goods coding and HAZCHEM markings
  - application of relevant agreements, codes of practice and other legislative requirements
  - hazards of the materials and process and appropriate hazard control procedures including hierarchy of control
  - identification and correct use of equipment, processes and procedures
  - conducting and interpreting required tests

- 'challenge' the calibration testing equipment.

Some sources of underpinning OHS knowledge include appropriate OHS and Dangerous Goods legislation, Australian Standards and NOHSC/State or Territory codes such as:

- NOHSC:1010 — National Standard for Plant
- AS4024.1 Safeguarding of machinery — general principles
- NOHSC:1003 National exposure standards for atmospheric contaminants in the occupational environment

The regulatory framework to include:

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

Key competencies

1 Collect, analyse and organise information	**2** Communicate ideas and information	**3** Plan and organise activities	**4** Work with others and in teams	**5** Use mathematical ideas and techniques	**6** Solve problems	**7** Use technology
2	2	2	2	1	2	2

Unit title

PMASUP300B Identify and implement opportunities to maximise production efficiencies

Unit descriptor

This competency covers the ability to identify, monitor and participate in strategies to improve production efficiencies to meet set targets. It applies to all employees who are required to provide input into process improvement initiatives. The competency is typically performed by an experienced technician, team leader or supervisor.

This unit does not cover maximisation of process/equipment efficiencies undertaken as part of the technician's normal role, which is covered in the relevant OPS competency unit.

The plant technician would:

- identify variances from production targets
- monitor performance against targets
- participate in and implement areas for improving process efficiencies.

Generally the plant technician would be part of a team in developing strategies to improve process efficiencies and may be expected to perform all parts of this unit. At all times they would be liaising and cooperating with other members of the team.

Prerequisites

This unit has the prerequisite of:

- PMASUP200A Implement production efficiencies

Elements	Performance criteria
1. Identify production performance.	1.1 Identify production targets for work area and work roles taking account of OHS 1.2 Identify techniques used to measure production performance against targets/standards 1.3 Record production performance in accordance with enterprise procedures.
2. Recognise issues that effect production process efficiencies.	2.1 Identify issues affecting output and quality 2.2 Identify potential/actual sources of wastage 2.3 Identify hazards and required controls associated with the process 2.4 Identify strategies to minimise production inefficiencies without sacrificing OHS.
3. Monitor and measure performance against targets.	3.1 Monitor performance of process/equipment/raw material usage against targets 3.2 Identify variations from targets and divergence from trends 3.3 Use appropriate techniques to monitor actual performance against targets

Elements	Performance criteria
	3.4 Identify factors inhibiting performance.
4. Participate in developing methods for improving process efficiencies.	4.1 Analyse problems/areas for improvement in process efficiencies 4.2 Utilise appropriate problem solving tools and techniques for identifying areas for improvement 4.3 Identify and take into account external factors 4.4 Identify required changes to process, standards and procedures 4.5 Recommend strategies for improvement to relevant personnel.
5. Participate in implementing process improvement strategies.	5.1 Implement developed strategies to minimise production inefficiencies and wastage 5.2 Monitor performance improvement recommendations 5.3 Evaluate results of improvements 5.4 Report results to relevant personnel.

Range of variables

Context

The competency unit applies to a wide range of processes and equipment. In large plants with multiple processes, it may apply to more than one process if those processes interact with each other. It applies to all operators across all functions.

Sources of information may include:

- yearly, monthly, weekly and daily production targets
- business objectives and goals
- control charts, runcharts and graphs
- enterprise manuals and procedures
- equipment specifications.

Sources of process inefficiencies and wastage may include:

- equipment downtime
- spillages
- leaks
- contamination
- raw material quality
- utilities usage
- productivity issues
- incorrect work allocation/priorities/planning
- incorrect processes/procedures.

Typical problems include:

- non-routine process and quality problems
- equipment selection, availability and failure

- teamwork and work allocation problems
- safety and emergency situations and incidents.

Required hazard controls should be identified in accordance with the hierarchy of control

All operations are performed in accordance with procedures.

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

Assessment context and methods

Assessment for this unit of competency will be on an operating plant. The unit will be assessed in as holistic a manner as is practical and may be integrated with the assessment of other relevant units of competency. Assessment will occur over a range of situations which will include disruptions to normal, smooth operation.

Simulation may be required to allow for timely assessment of parts of this unit of competency (eg, elements 2 & 3). Simulation should be based on the actual plant and will include walk throughs of the relevant competency components. Simulations may also include the use of case studies/scenarios and role plays.

This unit of competency requires a significant body of knowledge which will be assessed through questioning and the use of what if scenarios both on the plant (during demonstration of normal operations and walk throughs of abnormal operations) and off the plant.

Critical aspects

Evidence of satisfactory performance in this unit can be obtained by observation of performance and questioning to indicate understanding and knowledge of the elements of the competency and performance criteria.

Consistent performance should be demonstrated. In addition, look to see that:

- production targets are identified and performance monitored against targets
- potential and actual issues/problems/hazards are recognised and clarified
- appropriate strategies are recommended to improve efficiency and productivity within team/department to achieve targets
- safety and environmental implications of recommendations are recognised and addressed
- participation in implementing strategies to improve process efficiencies is demonstrated.

These aspects may be best assessed using a range of scenarios/case studies/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, unusual and improbable

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.

Resource implications

Assessment will require access to an operating plant over an extended period of time, or a suitable method of gathering evidence of operating ability over a range of situations. A bank of scenarios/case studies/what ifs will be required as will a bank of questions which will be used to probe the reasoning behind the observable actions.

Other assessment advice

In all plants it may be appropriate to assess this unit concurrently with relevant teamwork, operation or support units such as

- PMASUP390 Use structured problem solving tools.

Essential knowledge

Competence includes a thorough knowledge and understanding of the process, normal operating parameters and product quality to recognise non-standard situations.

Competence to include the ability to apply and explain, sufficient for the implementation of strategies to maximise production efficiencies:

- relevant equipment and operational processes
- hazards associated with the process
- application of the hierarchy of control in controlling the hazards
- enterprise policies and procedures
- enterprise goals, targets and measures
- enterprise quality, OHS and environmental requirements
- obligations of employers under OHS legislation as applied to the production process
- enterprise information systems and data collation
- industry codes and standards.

Key competencies

1 Collect, analyse and organise information	**2** Communicate ideas and information	**3** Plan and organise activities	**4** Work with others and in teams	**5** Use mathematical ideas and techniques	**6** Solve problems	**7** Use technology
2	2	1	2	1	2	2

Unit title

PMASUP320A Implement and monitor environmental policies

Unit descriptor

On completion of this unit, the worker will be able to implement and monitor environmental policies and procedures.

Prerequisites

This unit **has** the prerequisite of:

- PMASUP220A Monitor and control environmental hazards.

Element	Performance criteria
1. Provide information to the work team.	1.1 Provide information on environmental systems and procedures and other risk areas within the area of management responsibility 1.2 Make information readily accessible by all members in the work team 1.3 Explain information provided to the work team in a clear and concise manner 1.4 Convey organisation's activities/performance in regard to environmental management and business sustainability 1.5 Explain links between environmental, financial, safety and other risk areas and how these are integrated in organisational policies and practices.
2. Implement and monitor operational procedures.	2.1 Identify and assess existing and potential environmental risks and impacts 2.2 Seek expert advice as required 2.3 Carry out prioritised recommendations from the assessments as part of organisation's operational procedures 2.4 Implement organisational environmental risk and impact policies and procedures 2.5 Allocate tasks and monitor outcomes in accordance with organisational policies and targets 2.6 Implement contingency plan promptly when incidents occur.

Element	Performance criteria
3. Implement and monitor changes and continuous improvement.	3.1 Implement environmental improvement plans for own work group and integrate plans with other operational activities 3.2 Identify, implement and monitor best practice approaches to improving environmental performance so as to reduce environmental risk, consumption of resources and waste 3.3 Seek suggestions and ideas about environmental management from the work team and act upon suggestions where appropriate 3.4 Seek suggestions from supply chain, at tender/contract stage, for ways of improving environmental performance and incorporate in specification where appropriate.
4. Implement and monitor recording procedures.	4.1 Identify and implement internal and external reporting procedures 4.2 Maintain environmental records accurately and legibly 4.3 Store records securely in a form accessible for reporting purpose 4.4 Monitor information/records to identify trends that may require remedial action 4.5 Use information to promote continuous improvement of environmental performance.
5. Implement and monitor an environmental management training program.	5.1 Identify environmental training needs accurately by specifying gaps between environmental competencies required and those held by group members 5.2 Make arrangements to fulfill identified training needs for the work group with relevant parties.

Range of variables

Context

This competency covers process manufacturing plants which may involve workplace hazards such as:

- chemicals and hazardous materials
- gases and liquids under pressure
- materials handling.

This competency unit includes:

- legislation, codes and national standards relevant to the workplace which may include:
  - award and enterprise agreements and relevant industrial instruments
  - relevant legislation from all levels of government that effects business operation, especially in regard to OHS, environmental issues and industrial relations
  - relevant industry codes of practice

- awareness of the environment and the effects on the environment of the organisation's:
  - liquid waste
  - solid waste
  - gas/fume/vapour/smoke emissions, including fugitive emissions
  - hazardous materials
  - excessive energy and water use
  - excessive noise

and the workplace practices that can be used to minimise or prevent these effects.

Information may include:

- organisational policies and procedures
- relevant environmental legislation requirements
- voluntary environmental agreements entered into with external organisations/authorities
- continuous improvement policies and processes for the organisation.

Work team may include:

- formal or unstructured groups
- two or more people.

Environmental performance may include:

- resource efficiency (including materials, water and energy)
- minimisation of waste of materials, water and energy
- application of the waste hierarchy (avoid, reduce, reuse, recycle)
- reduction in use of non-renewable resources
- effective management of all environmental incidents.

Some approaches to improving environmental performance may include:

- preventing and minimising the production of pollution (eg, discharges to air, land and water, hazardous waste)
- improving housekeeping (eg, using a broom instead of a hose, using old rags for cleaning instead of toxic cleaners or water)
- substituting materials (eg, replacing toxic solvent based coatings with water based ones)
- changing processes (eg, mechanical cleaning, re-design of products/ procedures so that materials are used more efficiently)
- effective waste collection system allowing the separation of reusable, recyclable, hazardous and scheduled waste.

Environmental management policies must be appropriate to the scope and scale of the enterprise and may include:

- environmental load reduction and waste minimisation
- tenders for the provision of goods and services that specify environmentally preferred selection criteria
- protection of land and habitat

- environmentally sustainable work practices.

Supply chain may include:

- suppliers
- contractors
- others acting on enterprise's behalf.

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

Assessment context and methods

Assessment for this unit of competency will be on an operating plant. The unit will be assessed in as holistic a manner as is practical and may be integrated with the assessment of other relevant units of competency. Assessment will occur over a range of situations which will include disruptions to normal, smooth operation.

Simulation may be required to allow for timely assessment of parts of this unit of competency. Simulation should be based on the actual plant and will include walk throughs of the relevant competency components. Simulations may also include the use of case studies/scenarios and role plays.

This unit of competency requires a significant body of knowledge which will be assessed through questioning and the use of what if scenarios both on the plant (during demonstration of normal operations and walk throughs of abnormal operations) and off the plant.

Critical aspects

Competence must be demonstrated in the ability to apply plant and process knowledge to identify and analyse environmental hazards and initiate an appropriate response. It is important that critical procedures are known.

Consistent performance should be demonstrated. In particular look to see that:

- work teams are kept informed of environmental and other risk areas
- training needs are addressed
- records are kept.

These aspects may be best assessed using a range of scenarios/case studies/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, unusual and extreme situations that may have been generated from the past incident history of the plant, incidents on similar plants around the world, hazard analysis activities (eg, HAZOP) and similar sources.

Resource implications

Assessment will require access to an operating plant over an extended period of time, or a suitable method of gathering evidence of operating ability over a range of situations. A bank of scenarios/case studies/what ifs will be required as will a bank of questions which will be used to probe the reasoning behind the observable actions.

Other assessment advice

In all plants it may be appropriate to assess this unit concurrently with relevant teamwork and communication units.

In a major hazard facility, it may be appropriate to assess this unit concurrently with:

- PMAOHS300 Implement and monitor OHS policies and procedures
- PMAOHS310 Investigate incidents.

Essential knowledge

Knowledge and understanding of the control of environmental incident process and the importance of critical parameters enough to implement and monitor environmental management policies and procedures within an organisation.

Competence includes the ability to:

- apply and describe:
  - supply chain procedures
  - relevant legislation from all levels of government that effects business operation, especially in regard to OHS and environmental issues
- apply and explain:
  - relevant knowledge of environmental issues especially in regard to water catchments, air, noise, ecosystem, habitat, waste minimisation, resource consumption and greenhouse impacts relevant to own work area
  - relevant environmental systems and procedures
  - the relationship between resource efficiency, waste minimisation and the economic efficiency of the enterprise
- show underpinning skills of:
  - communication/consultation skills to ensure information is supplied to the work team
  - technology skills including the ability to operate and shut down equipment
  - ability to relate to people from a range of social, cultural and ethnic backgrounds and physical and mental abilities.

Key competencies

1 Collect, analyse and organise information	**2** Communicate ideas and information	**3** Plan and organise activities	**4** Work with others and in teams	**5** Use mathematical ideas and techniques	**6** Solve problems	**7** Use technology
2	2	2	2	2	2	2

Unit title

PMASUP330B Schedule production

Unit descriptor

This unit refers to the scheduling of production to meet operational requirements. It aims at ensuring that operators identify resource requirements, and document, monitor and adjust schedules in response to operational variations.

Typically, work would include the authorising, planning, scheduling and prioritising of day to day activities in order to optimise plant production and costs of production, using daily and weekly run plan guidelines/production schedules.

Prerequisites

This unit **has** the prerequisites of:

- PMASUP130A Follow established work plan
- PMASUP210A Process and record information.

Element	Performance criteria
1. Identify resources to meet production requirements.	1.1 Determine demand for product 1.2 Access and verify information on orders, stocks and delivery 1.3 Determine material requirements 1.4 Determine human resource requirements 1.5 Determine safety issues in meeting requirements.
2. Document schedules.	2.1 Determine production priorities 2.2 Identify production opportunities ('windows') 2.3 Develop production schedules in accordance with procedures taking account of safety requirements 2.4 Communicate and distribute production schedules to appropriate personnel.
3. Monitor production schedules.	3.1 Monitor production output against schedule 3.2 Identify variations between production and schedule 3.3 Record operational variation and discuss with appropriate personnel 3.4 Identify possible cause of variation.
4. Adjust schedules.	4.1 Adjust schedules in response to operational variation 4.2 Adjust schedules in response to unexpected events 4.3 Adjust/amend document schedules and distribute to appropriate personnel 4.4 Maintain product output in accordance with production and safety requirements.

Range of variables

Context

This competency is typically performed by an experienced operator, team leader or supervisor.

Indicative functions include:

- regular planning operations
- communication with
  - all relevant personnel
  - management and administration.

Unit content areas include responses to:

- immediate production needs
- future production needs
- reworking requirements.

Indicative information sources and resources include:

- customer requirements
- organisational plans, policies and procedures
- production schedules, run plans
- resource utilisation actuals and targets.

All operations are performed in accordance with standard operating procedures.

HSE

All operations 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 scheduler needs to ensure the HSE requirements take precedence.

Evidence guide

Assessment context and methods

Assessment for this unit of competency will be on an operating plant. The unit will be assessed in as holistic a manner as is practical and may be integrated with the assessment of other relevant units of competency. Assessment will occur over a range of situations which will include disruptions to normal, smooth operation.

Simulation may be required to allow for timely assessment of parts of this unit of competency (eg, elements 1 and 4). Simulation should be based on the actual plant and will include walk throughs of the relevant competency components. Simulations may also include the use of case studies/scenarios and role plays.

This unit of competency requires a significant body of knowledge which will be assessed through questioning and the use of what if scenarios both on the plant (during demonstration of normal operations and walk throughs of abnormal operations) and off the plant.

Critical aspects

Competence must be demonstrated in the ability to identify resource requirements, and document, monitor and adjust schedules in response to operational requirements.

Consistent performance should be demonstrated. In particular look to see that:

- resource requirements are correctly identified in accordance with production requirements
- schedules are planned for the most effective and efficient manner to meet operational requirements
- schedules allow for safety issues and reinforce safety priorities
- timelines are adhered to
- schedules are adjusted and resource requirements amended in response to operational variations
- variations to schedules are communicated and documented appropriately.

These aspects may be best assessed using a range of scenarios/case studies/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, unusual and improbable 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.

Resource implications

Assessment will require access to an operating plant over an extended period of time, or a suitable method of gathering evidence of operating ability over a range of situations. A bank of scenarios/case studies/what ifs will be required as will a bank of questions which will be used to probe the reasoning behind the observable actions.

Other assessment advice

In all plants it may be appropriate to assess this unit concurrently with relevant teamwork and communication units.

Essential knowledge

Competence to include the ability to apply and explain:

- production objectives, priorities, targets and resource requirements
- customer and quality requirements
- process and plant operational requirements
- hazards associated with the process
- awareness of the hierarchy of control in controlling the hazards
- impact of adjustments on process/plant efficiencies and production outcomes/targets
- safety implications for schedule/schedule changes
- planning, sequencing, monitoring and reviewing steps
- company policies and procedures

as is relevant to scheduling of production to meet operational requirements.

Key competencies

1 Collect, analyse and organise information	**2** Communicate ideas and information	**3** Plan and organise activities	**4** Work with others and in teams	**5** Use mathematical ideas and techniques	**6** Solve problems	**7** Use technology
2	2	2	1	2	2	1

Unit title

PMASUP340A Conduct pipeline pigging

Unit descriptor

In a typical scenario, an operations technician in/on a large plant/platform looks after the pig launching and receiving operations. The type of pigs used may include batching, cleaning, gauging, intelligent and foam pigs.

The operations technician would:

- understand the risks associated with pigging and closure mechanisms
- prepare the pipeline system for pig launching and rectify any operational problems
- prepare the pipeline system for pig receiving and rectify any operational problems
- interpret or assist in interpreting pigging data.

Generally, the operations technician would be the key person in the team involved in the pigging operations and would be capable of performing all parts of this unit. At all times they would be liaising and cooperating with other members of the team.

Prerequisites

This unit **has no** prerequisites.

Element	Performance criteria
1. Prepare the pipeline system for pigging (launching/receiving).	1.1 Liaise with the Pipeline Control Centre to ensure correct flow conditions are in the pipeline system prior to launching 1.2 Verify that the permit to work has been issued to cover the required work 1.3 Prepare specified pig in accordance with manufacturer's specifications 1.4 Prepare pipeline for pigging operation in accordance with legislative and enterprise procedure requirements.
2. Launch, monitor progress and/or receive pig.	2.1 Prepare launching and receiving scraper barrels and intermediate site for launching and receiving operations 2.2 Load the pig into the scraper barrel and launch 2.3 Calculate pig travel speed during the pig's progress 2.4 Monitor and track progress of the pig in the pipeline system to ensure pig is not lost or does not become stuck 2.5 Receive pig in accordance with legislative and enterprise procedural requirements 2.6 Adopt remedial actions or emergency response procedures to rectify any identified faults.

Element	Performance criteria
3. Interpret pigging data.	3.1 Inspect the received pig to determine the wear sustained to the pig material or assist the team designated to this task 3.2 Measure the quantity and mass of waste material gathered during pigging operations and collect a sample for analysis to determine pipeline conditions or assist the team designated to this task 3.3 Dispose of waste materials to procedure 3.4 Record data accurately to assist with assessment of pipeline condition.
4. Control hazards.	4.1 Identify hazards associated with pig launching/receiving or interpret hazards identified in enterprise procedures for pigging 4.2 Observe and assess the risks arising from these hazards 4.3 Implement measures or interpret instructions to control those risks in line with procedures and duty of care.
5. Respond to problems.	5.1 Identify possible problems in equipment or pigging process 5.2 Determine problems needing action 5.3 Determine possible fault causes 5.4 Rectify problem using appropriate solution within area of responsibility 5.5 Follow through items initiated until final resolution has occurred 5.6 Report problems outside area of responsibility to designated person.

Range of variables

Context

This unit of competency includes all such items of equipment and unit operations which form part of the pigging system. For your operation this may include:

- batching pigs
- cleaning pigs
- foam pigs
- gauging pigs
- intelligent pigs.

Typical pigging problems may include:

- closure seal failure resulting in hydrocarbon release and possible explosion
- closure fastening mechanism fails and results in door striking technician
- stuck pig

- delayed pig
- scraper enclosure leaks
- leaking valves
- damaged pig.

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

Assessment context and methods

Assessment for this unit of competency will be on an operating plant/pipeline. The unit will be assessed in as holistic a manner as is practical and may be integrated with the assessment of other relevant units of competency. Assessment will occur over a range of situations, which will include disruptions to normal, smooth operation.

Simulation may be required to allow for timely assessment of parts of this unit of competency (eg, element 3). Simulation should be based on the actual plant and will include walk throughs of the relevant competency components. Simulations may also include the use of case studies/scenarios, role plays and 3D virtual reality interactive systems. In the case of evacuation training or training for competencies practised in life threatening situations, simulation may be used for the bulk of the training.

This unit of competency requires an application of the knowledge contained in the use of pigs and associated equipment, to the level needed to maintain control and recognise and resolve problems. This can be assessed through questioning and the use of what if scenarios both on the plant (during demonstration of normal operations and walk throughs of abnormal operations) and off the plant.

Critical aspects

Competence must be demonstrated in the ability to recognise and analyse potential situations requiring action and then in implementing appropriate corrective action. The emphasis should be on the ability to stay out of trouble rather than on recovery from a disaster.

Consistent performance should be demonstrated. In particular look to see that:

- early warning signs of equipment/processes needing attention or with potential problems are recognised
- the range of possible causes can be identified and analysed and the most likely cause determined
- appropriate action is taken to ensure a timely return to full performance
- obvious problems in related plant/platform areas are recognised and an appropriate contribution made to their solution.

These aspects may be best assessed using a range of scenarios/case studies/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, unusual and improbable

situations which may have been generated from past incident history of pigging operations, pigging incidents from similar plants/platforms around the world, hazard analysis activities and similar sources.

Resource implications

Assessment will require access to pipeline pigging equipment over an extended period of time, or a suitable method of gathering evidence of operating ability over a range of situations. A bank of scenarios/case studies/what ifs will be required as will a bank of questions which will be used to probe the reasoning behind the observable actions.

Other assessment advice

In all plants it may be appropriate to assess this unit concurrently with relevant teamwork and communication units. Consider co-assessment with:

- PMASUP236A Operate vehicles in the field.

Essential knowledge

The knowledge referred to in the evidence guide for this unit includes:

- reasons for pipeline pigging and the type of pig used for each application
- prevention/mitigation measures for closure risks
- all items on a schematic of the pigging system and the function of each
- the nature/condition of materials/flows entering and leaving the scraper barrels during the launching and receiving operations
- correct valve sequences,
- expected system pressures for launching/receiving operations
- types of pigs and their purpose.

Competence also includes the ability to isolate the causes of problems to an item of equipment within the pigging system and to distinguish between causes of problems/alarm/fault indications such as:

- instrument failure/wrong reading
- electrical failure
- mechanical failure
- operational problem.

Key competencies

1 Collect, analyse and organise information	**2** Communicate ideas and information	**3** Plan and organise activities	**4** Work with others and in teams	**5** Use mathematical ideas and techniques	**6** Solve problems	**7** Use technology
2	2	2	2	2	2	2

Unit title

PMASUP341A Monitor and maintain instrument and control systems

Unit descriptor

This competency covers the skills needed to monitor and maintain instrument/electrical systems used for process measurement and control of products. People performing this competency would typically be able to:

- test, repair and recommission instrumentation and control systems used in the industry
- monitor equipment operation
- issue permits to allow work to be undertaken
- verify equipment operation
- calibrate instrumentation
- prepare and analyse reports related to the equipment/systems.

This competency covers any control system/instrumentation forming part of a control system, such as those for compressor systems, prime movers, valve systems and systems measuring/controlling flow, pressure or temperature. It also covers the use of relevant test equipment. Control systems can be pneumatic, electrical/electronic, electro-pneumatic, computer-based, etc.

This competency includes responding to emergency situations, such as a leaks, fire or equipment failure. It also includes troubleshooting a range of problems which could include electrical faults, calibration errors or equipment failure. Persons performing this competency would also, as part of their job role, identify and control hazards in their work area and with equipment/systems.

Prerequisites

This unit has the following prerequisites:

- PMAPER300B Issue work permits.

Element	Performance criteria
1. Monitor equipment operation.	1.1 Monitor equipment operation according to instrument/electrical equipment operating principles and parameters 1.2 Access and interpret relevant technical drawings and schematics to determine system faults 1.3 Issue permit to work to allow work to be undertaken 1.4 Verify equipment operation/performance through test procedures to ensure correct operation and to confirm identified problems from other sources 1.5 Correct operational variations through calibration and adjustment 1.6 Document operational variations.

Element	Performance criteria
2. Test/repair equipment.	2.1 Verify equipment is operating correctly and document test results 2.2 Apply appropriate troubleshooting techniques to determine the cause of operational faults 2.3 Rectify operational faults through the application of relevant maintenance procedures 2.4 Isolate, remove and dispose of faulty equipment, and install new equipment 2.5 Verify the performance of newly installed equipment to ensure it meets required operational parameters and conditions 2.6 Record all repairs/installations to provide historical records of the condition of system equipment.
3. Recommission systems and equipment.	3.1 Recommission repaired/installed equipment to on line operation in the correct sequence at the required operational parameters 3.2 Monitor or activate systems to ensure they are operating both safely and effectively 3.3 Close out permit to work and restore site/system to normal operation.
4. Compile and analyse reports.	4.1 Collect information concerning deviations/repaired equipment and put into accepted reporting format 4.2 Compile reports ensuring they provide an accurate and ongoing record of deviations in pipeline processes and a current record of pipeline and equipment trends 4.3 Utilise information or reports for short and long term deviation control planning.

Range of variables

Context

Control systems for one or more of the following may be included:

- compressor systems and equipment (compressors, monitoring systems, power supply systems, pumps, pumping systems and equipment, pressure vessels/filtration equipment, coolers, scrubbers, expanders, anti surge systems, safety systems and compressor control systems)
- prime movers which may include turbine engines, reciprocating engines, electric motors (fuel and carburettion systems, ignition systems, lubrication systems, induction and exhaust systems, governing systems, power supply systems, safety and shutdown systems)
- flow systems (piping systems, metering equipment, flow control equipment, pressure and temperature transmitters and transducers, telemetry equipment, PLCs, flow computers, electro-pneumatic process control equipment and their associated on-line analytical instrumentation such as gas chromatographs, moisture analysers, gas sampling and gas analysis equipment, pig)

- valve systems (non-control valves, control and shut off valves, non-return or check valves and pressure relief valves, manual hand operated actuator, gas/hydraulic actuator and pneumatic valves).

Emergency responses include:

- leaks/loss of containment
- fire
- equipment failure
- hazards and incidents.

Relevant personnel may include:

- supervisors
- maintenance personnel
- organisation employees
- contractors
- government bodies.

Types of faults may include:

- material leaks
- electrical problems
- compressor or pump failure
- out of current inspection status
- gauge failure or hose rupture/leaks
- instruments out of calibration
- non-flow of material
- instruments and equipment requiring cleaning.

Reports may include:

- routine inspections (daily readings, monthly checks)
- scheduled maintenance activities
- mandatory or statutory inspections
- hazard and incident reports
- quality assurance system requirements/reports.

Instrument/electrical systems may include:

- process analysing systems, eg, gas analysis
- emergency shutdown systems
- fire systems
- pressure and temperature control systems
- metering systems, eg, orifice, turbine, positive displacement
- telemetry and SCADA systems
- communications systems
- solar systems
- utility systems.

Test equipment and tools may include:

- dead weight tester
- transmission unit
- ice point tester
- decade box
- multimeter
- RTD calibrator
- chart recorders
- data logging equipment
- hand tools
- valves, actuators and flanges.

The use and operation of personal computers, other hardware mediums and associated software is required.

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.

Persons are required to have skills in hazard identification, assessment and application of control measures.

Evidence guide

Assessment context and methods

Assessment for this unit of competency will be on an operating plant. The unit will be assessed in as holistic a manner as is practical and may be integrated with the assessment of other relevant units of competency. Assessment will occur over a range of situations which will include disruptions to normal, smooth operation.

Simulation may be required to allow for timely assessment of this unit of competency. Simulation should be based on the actual plant and will include walk throughs of the relevant competency components. Simulations may also include the use of case studies/scenarios and role plays.

This unit of competency requires a significant body of knowledge which will be assessed through questioning and the use of what if scenarios both on the plant (during demonstration of normal operations and walk throughs of abnormal operations) and off the plant.

Critical aspects

Competence must be demonstrated in the ability to recognise and analyse potential situations requiring action and then in implementing appropriate corrective action. The emphasis should be on the ability to stay out of trouble rather than on recovery from a disaster.

Consistent performance should be demonstrated. In particular look to see that:

- early warning signs of equipment/processes needing attention or with potential problems are recognised
- the range of possible causes can be identified and analysed and the most likely cause determined
- appropriate action is taken to ensure a timely return to full performance
- obvious problems in related plant areas are recognised and an appropriate contribution made to their solution.

Also confirm that the person undertaking this competency has the ability to:

- implement all occupational health, safety and environmental procedures relevant to this unit
- apply the permit to work system within the context of this unit
- interpret a range of process and control system drawings and schematics in order to undertake required or identified repairs/modifications to electrical systems.

These aspects may be best assessed using a range of scenarios/case studies/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, unusual and improbable 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.

Resource implications

Assessment will require access to an operating plant over an extended period of time, or a suitable method of gathering evidence of operating ability over a range of situations. A bank of scenarios/case studies/what ifs will be required as will a bank of questions which will be used to probe the reasoning behind the observable actions.

Other assessment advice

In all plants it may be appropriate to assess this unit concurrently with relevant teamwork and communication units. Consider co-assessment with relevant OPS units.

In a major hazard facility, it may be appropriate to assess this unit concurrently with:

- PMAOHS100A Follow OHS procedures.

Essential knowledge

A demonstrated working knowledge and application of the company's specific work organisations and workflow would be highly regarded.

A person undertaking this unit must be able to demonstrate a knowledge of and application for test equipment typically used with control system repair/maintenance/calibration.

A person undertaking this unit of competency would also be expected to demonstrate the knowledge and ability to:

- test, repair, recommission and monitor the operational condition of instrument control systems utilised within the industry
- communicate and report the operational condition and history of instrument control systems to other team members and company personnel
- coordinate own work and the work of others including on site contractors/operators.

It is essential that a person be able to apply the underlying skills and knowledge contained within this competency across a range of instrument and control systems.

Key competencies

1 Collect, analyse and organise information	**2** Communicate ideas and information	**3** Plan and organise activities	**4** Work with others and in teams	**5** Use mathematical ideas and techniques	**6** Solve problems	**7** Use technology
2	2	1	2	2	2	2

Unit title

PMASUP342A Monitor and maintain electrical systems

Unit descriptor

This competency covers the skills needed to monitor and maintain electrical systems and equipment on systems used to carry products. People performing this competency would typically be able to:

- test, repair and recommission electrical systems and equipment used in the industry
- monitor equipment operation
- issue permits to allow work to be undertaken
- verify equipment and system operation
- prepare and analyse reports related to the equipment/systems.

This competency covers a wide range of electrical equipment and systems such as voltage regulators, alternators, generators and motors, battery banks, air conditioning systems, lighting, emergency shutdown systems, low voltage power systems, solar power systems, fire systems, and control panels. People performing this competency may be required to possess an electrical licence from a relevant electrical licensing authority, depending on local legislative requirements.

This competency includes troubleshooting a range of problems which could include electrical faults, or equipment failure. Persons performing this competency would also, as part of their job role, identify and control hazards in their work area and with equipment/systems.

Prerequisites

This unit has the following prerequisites:

- PMAPER300B Issue work permits.

Element	Performance criteria
1. Monitor equipment operation.	1.1 Monitor equipment operation according to electrical equipment operating principles and parameters 1.2 Access and interpret relevant technical drawings and schematics to determine system faults 1.3 Issue permit to work to allow work to be undertaken 1.4 Verify equipment operation/performance through test procedures to ensure correct operation and seek confirmation of identified problems from other sources 1.5 Correct operational variations through calibration and adjustment 1.6 Document operational variations.

Element	Performance criteria
2. Test/repair equipment.	2.1 Verify equipment is operating correctly and document test results ensuring that statutory electrical testing requirements have been completed 2.2 Apply appropriate troubleshooting techniques to determine the cause of detected operational faults 2.3 Rectify operational faults through the application of relevant maintenance procedures 2.4 Isolate, remove and dispose of faulty equipment, and install new equipment 2.5 Verify installed equipment to ensure it meets required operational parameters and conditions 2.6 Record all repairs/installations to provide historical records of the condition of system equipment.
3. Recommission systems and equipment.	3.1 Recommission repaired/installed equipment to on line operation in the correct sequence at the required operational parameters 3.2 Monitor or activate systems to ensure they are operating both safely and effectively 3.3 Close out permit to work and restore site/system to normal operation.
4. Compile and analyse reports.	4.1 Collect information concerning deviations/repaired equipment, and put into accepted reporting format 4.2 Compile reports ensuring they provide an accurate and ongoing record of deviations in pipeline processes and a current record of pipeline and equipment trends 4.3 Utilise information or reports for short and long term planning in deviation control.

Range of variables

Context

Electrical equipment may include:

- voltage regulating equipment
- battery banks, eg, nicad, lead acid
- solar generating equipment
- alternators, generators and motors
- uninterrupted power supplies (UPS)
- control panels
- lighting
- air conditioning
- power tools and electrical leads
- SWER lines.

Electrical systems may include:

- emergency shutdown systems
- fire systems
- solar systems
- utility systems
- uninterrupted power supply systems
- low voltage power systems
- SWER line systems
- communications systems.

Test equipment may include:

- multimeter
- chart recorders
- data logging equipment
- amp and volt meters
- watt meters
- high voltage testing equipment
- earth leakage test equipment
- electrical inspection tags.

Applicable Australian standards/legislation may include:

- OHS legislation
- utility codes and standards
- AS 2885: Pipelines — Gas and liquid petroleum
- AS 2430.1-1987: Classification of hazardous areas — Explosive gas atmospheres
- AS 1768-1991: Lightning protection
- AS1596-1997/Amdt 1-1999: Storage and handling of Liquefied Petroleum Gas
- AS 1697-1987: Gas transmission and distribution systems (known as the SAA Gas Pipeline Code)
- AS 2832.1:1998: Cathodic protection of metals — Pipes and cables
- AS 3000:2000: Electrical installations (known as the Australian/New Zealand Wiring Rules)
- AS 2239-1993: Galvanic (sacrificial) anodes for cathodic protection.

The use and operation of personal computers, other hardware mediums and associated software is required.

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.

Persons are required to have skills in hazard identification, assessment and application of control measures.

Evidence guide

Assessment context and methods

Assessment for this unit of competency will be on an operating plant. The unit will be assessed in as holistic a manner as is practical and may be integrated with the assessment of other relevant units of competency. Assessment will occur over a range of situations which will include disruptions to normal, smooth operation.

Simulation may be required to allow for timely assessment of this unit of competency. Simulation should be based on the actual plant and will include walk throughs of the relevant competency components. Simulations may also include the use of case studies/scenarios and role plays.

This unit of competency requires a significant body of knowledge which will be assessed through questioning and the use of what if scenarios both on the plant (during demonstration of normal operations and walk throughs of abnormal operations) and off the plant.

Critical aspects

Competence must be demonstrated in the ability to recognise and analyse potential situations requiring action and then in implementing appropriate corrective action. The emphasis should be on the ability to stay out of trouble rather than on recovery from a disaster.

Consistent performance should be demonstrated. In particular look to see that:

- early warning signs of equipment/processes needing attention or with potential problems are recognised
- the range of possible causes can be identified and analysed and the most likely cause determined
- appropriate action is taken to ensure a timely return to full performance
- obvious problems in related plant areas are recognised and an appropriate contribution made to their solution.

Also confirm that the person undertaking this competency has the ability to:

- implement all occupational health, safety and environmental procedures relevant to this unit
- apply the permit to work system within the context of this unit
- interpret a range of process and system control drawings and schematics in order to undertake required or identified repairs/modifications to electrical systems.

These aspects may be best assessed using a range of scenarios/case studies/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, unusual and improbable 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.

Resource implications

Assessment will require access to an operating plant over an extended period of time, or a suitable method of gathering evidence of operating ability over a range of situations. A bank of scenarios/case studies/what ifs will be required as will a bank of questions which will be used to probe the reasoning behind the observable actions.

Other assessment advice

In all plants it may be appropriate to assess this unit concurrently with relevant teamwork and communication units. Consider co-assessment with relevant OPS units.

In a major hazard facility, it may be appropriate to assess this unit concurrently with:

- PMAOHS100A Follow OHS procedures.

Essential knowledge

A demonstrated working knowledge and application of the company's specific work organisations and workflow would be highly regarded.

A person undertaking this unit must be able to demonstrate a knowledge of and application for test equipment typically used with electrical system repair or maintenance.

It is essential that a person be able to apply the underlying skills and knowledge contained within this competency across a range of electrical systems.

A person undertaking this unit of competency would also be required to demonstrate the knowledge and ability to:

- test, repair, recommission and monitor the operational condition of electrical systems utilised within the pipeline industry
- communicate and report the operational condition and history of electrical systems to other team members and company personnel
- coordinate own and the work of others including on site contractors/operators.

Key competencies

1 Collect, analyse and organise information	**2** Communicate ideas and information	**3** Plan and organise activities	**4** Work with others and in teams	**5** Use mathematical ideas and techniques	**6** Solve problems	**7** Use technology
2	2	2	2	2	2	2

Unit title
PMASUP343A Monitor and maintain cathodic protection systems

Unit descriptor

In a typical scenario the operations technician conducts the maintenance and monitoring of pipeline cathodic protection (CP) systems and routine operations normally conducted on those systems. The technician is required to carry out prescribed inspections and monitoring activities as detailed in procedures and compile reports, outlining results including identified system anomalies.

The operations technician will:

- monitor CP systems
- retrofit components that test faulty
- optimise system outputs
- identify and rectify operational problems
- diagnose and troubleshoot problems.

Generally the operations technician would operate independently and be expected to be capable of performing all parts of this unit, however they may be part of a team during critical inspections or maintenance operations. At all times they would be liaising and cooperating with other members of the team.

AS 2885 Part 3 applies as the principle reference standard for this competency.

Prerequisites

This unit **has no** prerequisites. However, under some circumstances **electrical licences** or **restricted electrical licences** may be required. Local regulations need to be checked for details.

Element	Performance criteria
1. Prepare and organise operational and maintenance activities.	1.1 Review previous reports and check for outstanding work orders or notices 1.2 Assemble necessary equipment and plan maintenance activities 1.3 Take readings at regular intervals from CP system monitoring/test equipment and interpret collected data 1.4 Identify CP faults and notify appropriate personnel 1.5 Compile reports based on the collected data and analyse to determine system maintenance and operational adjustments to optimise system integrity.

Element	Performance criteria
2. Monitor and adjust electrical equipment.	2.1 Monitor equipment operating parameters to ensure operation within relevant Australian Standard specifications and make adjustments as required 2.2 Operate cathodic protection equipment in accordance with the principles of cathodic protection impressed current/corrosion systems 2.3 Maintain CP system at maximum efficiency within design parameters 2.4 Monitor equipment operating parameters to determine if the correct operating conditions of the equipment are being maintained 2.5 Collect and interpret data and determine maintenance requirements 2.6 Conduct regular inspections to ensure equipment integrity is maintained and results are recorded and any system abnormalities identified 2.7 Carry out adjustments and maintenance to the equipment where abnormalities in the system have been identified.
3. Conduct CP system surveys.	3.1 Interpret survey specifications to determine survey path and equipment requirement 3.2 Conduct preparation activities on CP system to enable survey to be carried out 3.3 Conduct CP surveys of the system and log and record results of the survey 3.4 Fault find and diagnose operating CP systems 3.5 Download collected survey data to allow a report to be compiled concerning survey findings.
4. Recommission the system.	4.1 Recommission the system to meet system operational requirements 4.2 Restore site to meet environmental and operational requirements 4.3 Compile and update records and drawings to reflect the repair/modification 4.4 Maintain incident records.
5. Analyse and utilise CP data.	5.1 Analyse survey report data and findings to determine system abnormalities and maintenance required for the continued operation of the system 5.2 Liaise with appropriate personnel to repair or modify as required, areas/equipment identified for maintenance
6. Control hazards.	6.1 Identify hazards in cathodic protection systems 6.2 Assess the risks arising from those hazards 6.3 Implement measures to control those risks in line with procedures and duty of care.

Element	Performance criteria
7. Respond to problems.	7.1 Identify possible problems in equipment or process 7.2 Determine problems needing action 7.3 Determine possible fault causes 7.4 Rectify problem using appropriate solution within area of responsibility 7.5 Follow through items initiated until final resolution has occurred 7.6 Report problems outside area of responsibility to designated person.

Range of variables

Context

This unit of competency includes all such items of equipment and unit operations which form part of the CP system. For your plant/pipeline this may include:

- solar powered power generation systems
- 240V power generation systems
- CP system interrupters
- insulation and monolithic joints
- galvanic anode beds
- battery banks — nicad and lead acid
- transformer rectifiers and CPUs
- lightning protection equipment
- CP test points
- Kirk cells.

Types of CP problems may include:

- coating damage/deterioration
- interference from other systems
- anode not working
- incorrect current output from CPU/TR unit
- equipment fault/failure.

OHS

The identification and control of hazards and the application of OHS is to be in accordance with current, applicable legislation and regulations and company procedures. All work is carried out at all times in accordance with these requirements

Evidence guide

Assessment context and methods

Assessment for this unit of competency will be on an operating plant. The unit will be assessed in as holistic a manner as is practical and may be integrated with the assessment of other relevant units of competency. Assessment will occur over a range of situations, which will include disruptions to normal, smooth operation.

Simulation may be required to allow for timely assessment of parts of this unit of competency (eg, elements 1 to 5). Simulation should be based on the actual plant and will include walk throughs of the relevant competency components. Simulations may also include the use of case studies/scenarios, role plays and 3D virtual reality interactive systems. In the case of evacuation training or training for competencies practised in life threatening situations, simulation may be used for the bulk of the training.

This unit of competency requires an application of the knowledge contained in the use of the CP systems and their integral equipment, to the level needed to maintain control and recognise and resolve problems. This can be assessed through questioning and the use of what if scenarios both on the plant (during demonstration of normal operations and walk throughs of abnormal operations) and off the plant.

Critical aspects

Competence must be demonstrated in the ability to recognise and analyse potential situations requiring action and then in implementing appropriate corrective action. The emphasis should be on the ability to stay out of trouble rather than on recovery from a disaster.

Consistent performance should be demonstrated. In particular look to see that:

- early warning signs of equipment/processes needing attention or with potential problems are recognised
- the range of possible causes can be identified and analysed and the most likely cause determined
- appropriate action is taken to ensure a timely return to full performance
- obvious problems in related plant areas are recognised and an appropriate contribution made to their solution.

These aspects may be best assessed using a range of scenarios/case studies/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, unusual and improbable 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.

Resource implications

Assessment will require access to an operating plant over an extended period of time, or a suitable method of gathering evidence of operating ability over a range of situations. A bank of scenarios/case studies/what ifs will be required as will a bank of questions which will be used to probe the reasoning behind the observable actions.

Other assessment advice

In all plants it may be appropriate to assess this unit concurrently with relevant teamwork and communication units. Consider co-assessment with:

- PMASUP342A Monitor and maintain electrical systems
- PMAOPS230A Operate, monitor and maintain pipeline facilities/equipment
- PMASUP243A Monitor and maintain pipeline coatings
- PMASUP236A Operate vehicles in the field.

Essential knowledge

The knowledge referred to in the evidence guide for this unit includes:

- company specific work organisations and workflow
- function of cathodic protection systems and cathodic protection equipment
- CP systems, monitor and adjust related electrical power systems
- function of solar powered power generation systems
- operations of 240V power generation systems
- insulation and monolithic joints.

Competence also includes the ability to isolate the causes of problems to an item of equipment within the CP system and to distinguish between causes of problems/alarm/fault indications such as:

- interference within the system
- instrument failure/wrong reading
- electrical failure
- operational problems.

Key competencies

1 Collect, analyse and organise information	**2** Communicate ideas and information	**3** Plan and organise activities	**4** Work with others and in teams	**5** Use mathematical ideas and techniques	**6** Solve problems	**7** Use technology
2	1	1	1	2	2	2

Unit title

PMASUP344A Monitor and control repairs and modifications on operational pipelines

Unit descriptor

In a typical scenario an operations technician is responsible for ensuring that all modification and repair activities conducted on an operational pipeline system are carried out in accordance with approved procedures and specifications.

In particular this refers to the individual monitoring and operating the pipeline system to enable the welding, cutting, repair/modification activities to be carried out, followed by the reinstatement of the pipeline system after the task has been completed.

The operations technician would:

- ensure the nature of the intervention was clearly understood before work commenced
- make certain the site was accessible and safe and that a work permit had been issued
- monitor the conducting of appropriate tests on the modification/repair and verify the modification/repair was safe before recommissioning the pipeline system
- recommission the pipeline system after the work and testing was completed.

Generally the operations technician would be part of a team. They would be expected to be capable of performing all facets of the competency whilst following site specific procedures. At all times they would be liaising and communicating with relevant team members.

AS 2885 Part 2 and Part 3 form the principle reference standard for this competency.

Prerequisites

The competency **has no** prerequisites.

Element	Performance criteria
1. Prepare and plan for pipeline repair or modifications.	1.1 Examine the work area and ensure there is adequate access to the affected section of the pipeline 1.2 Identify any on-site hazards or irregularities 1.3 Obtain plans, instructions, relevant codes and drawings of proposed works 1.4 Ensure pipeline repairers are aware of site hazards and confirm that a permit to work has been issued 1.5 Convey information concerning the identified repair/modification to all parties concerned with the repair 1.6 Inform third parties of the need for access to the site as necessary.

Element	Performance criteria
2. Monitor pipe welding, cutting and fabrication.	2.1 Ensure the pipeline system is prepared in accordance with procedures and made safe for work to commence 2.2 Monitor the work to ensure that welding, stoppling or modifications are carried out according to the approved work plan 2.3 Verify that the necessary inspection and testing is conducted on the repaired or modification area 2.4 Confirm that test results are valid and that the work has been conducted to specification 2.5 Facilitate site clean up to remove waste materials and debris and restore the site to original condition 2.6 Sign off the permit to work at the completion of the work 2.7 Ensure that all environmental obligations are met.
3. Recommission pipeline.	3.1 Contact the control centre and advise when repairs are completed successfully and arrange for the system to be brought back on line 3.2 Where the line has been manually isolated restore pipeline operation when authorised to do so 3.3 Inspect the area of the pipeline subject to the permit to work for any sign of leakage or defects 3.4 Confirm the pipeline is holding pressure and the system is meeting operational requirements.
4. Complete reports and documentation.	4.1 Complete site reports and documentation as required by regulatory bodies or company procedures 4.2 Ensure site drawings are updated to show accurate location of repair or modification 4.3 Liaise with relevant company departments to ensure all records and drawings are updated to reflect the repair/modification.
5. Control hazards.	5.1 Identify hazards in the pipeline system work area 5.2 Assess the risks arising from those hazards 5.3 Implement measures to control those risks in line with procedures and duty of care.
6. Respond to problems.	6.1 Identify possible problems in pipeline or process 6.2 Determine problems needing action 6.3 Determine possible fault causes 6.4 Rectify problem using appropriate solution within area of responsibility 6.5 Follow through items initiated until final resolution has occurred 6.6 Report problems outside area of responsibility to designated person.

Range of variables

Context

This unit of competency includes all such items of equipment and unit operations which form part of the pipeline system. For your system this may include:

- non-destructive testing equipment including radiographic, dye penetrant, ultrasonic and others
- pipe cutting and repair equipment
- air/gas movers
- lifting equipment
- plans and drawings
- hand and power tools.

Typical problems for your system may include:

- lifting equipment failures
- fire and explosion
- burns
- atmospheric hazards
- manual handling hazards
- static electricity.

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

Assessment context and methods

Assessment for this unit of competency will be on an operating pipeline. The unit will be assessed in as holistic a manner as is practical and may be integrated with the assessment of other relevant units of competency. Assessment will occur over a range of situations, which will include disruptions to normal, smooth operation.

Simulation may be required to allow for timely assessment of parts of this unit of competency (eg, elements 1, 2 and 4). Simulation should be based on the actual plant and will include walk throughs of the relevant competency components. Simulations may also include the use of case studies/scenarios, role plays and 3D virtual reality interactive systems. In the case of evacuation training or training for competencies practised in life threatening situations, simulation may be used for the bulk of the training.

This unit of competency requires an application of the knowledge contained in the use of the pipeline system and its integral equipment, to the level needed to maintain control and recognise and resolve problems. This can be assessed through questioning and the

use of what if scenarios both on the plant (during demonstration of normal operations and walk throughs of abnormal operations) and off the plant.

Critical aspects

Competence must be demonstrated in the ability to recognise and analyse potential situations requiring action and then in implementing appropriate corrective action. The emphasis should be on the ability to stay out of trouble rather than on recovery from a disaster.

Consistent performance should be demonstrated. In particular look to see that:

- early warning signs of equipment/processes needing attention or with potential problems are recognised
- the range of possible causes can be identified and analysed and the most likely cause determined
- appropriate action is taken to ensure a timely return to full performance
- obvious problems in related plant areas are recognised and an appropriate contribution made to their solution.

These aspects may be best assessed using a range of scenarios/case studies/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, unusual and improbable 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.

Resource implications

Assessment will require access to an operating plant over an extended period of time, or a suitable method of gathering evidence of operating ability over a range of situations. A bank of scenarios/case studies/what ifs will be required as will a bank of questions which will be used to probe the reasoning behind the observable actions.

Other assessment advice

In all plants it may be appropriate to assess this unit concurrently with relevant teamwork and communication units. Consider co-assessment with:

- PMAOHS410A Manage emergency incidents.

Essential knowledge

The knowledge referred to in the evidence guide for this unit includes:

- welding and cutting techniques on operational pipeline systems
- hot tap and stoppling techniques
- inspection techniques
- pipeline codes and standards
- pipeline drawings and plans
- the operation of pipe cutting equipment
- the operation of lifting and moving equipment
- fitting of pipeline repair clamps and sleeves
- safety systems and procedures
- quality assurance system requirements
- excavation of pipelines
- emergency response plans and procedures.

Competence also includes the ability to isolate the causes of problems to an item of equipment within the pipeline system and to distinguish between causes of problems/alarm/fault indications such as:

- leakages
- blockages
- instrument failure
- mechanical failure
- ice formation
- flow variations.

Key competencies

1 Collect, analyse and organise information	**2** Communicate ideas and information	**3** Plan and organise activities	**4** Work with others and in teams	**5** Use mathematical ideas and techniques	**6** Solve problems	**7** Use technology
1	1	2	1	X	2	2

Unit title

PMASUP390A Use structured problem solving tools

Unit descriptor

This competency covers the solving of process and other problems, beyond those associated directly with the process unit, using structured process improvement tools to identify improvements and/or solve problems. The competency is typically performed by an experienced technician, team leader or supervisor.

This unit does not cover the solving of problems undertaken as part of the technician's normal role which is covered in the relevant operation competency unit.

The plant technician would:

- use a range of formal problem solving techniques
- identify and clarify the nature of the problem
- devise the best solution
- evaluate the solution
- develop an implementation plan to rectify the problem.

Generally the plant technician would be part of a team during the solving of complex or systemic problems and would be expected to perform all parts of this unit. At all times they would be liaising and cooperating with other members of the team.

Prerequisites

This unit **has no** prerequisites.

Element	Performance criteria
1. Identify the problem.	1.1 Identify variances from normal operating parameters and product quality 1.2 Define the extent, cause and nature of the problem by observation and investigation 1.3 State and specify the problem clearly.
2. Determine fundamental cause of problem.	2.1 Identify possible causes based on experience and the use of problem solving tools/analytical techniques 2.2 Develop possible cause statements 2.3 Identify fundamental cause.
3. Determine corrective action.	3.1 Consider all possible options for resolution of the problem 3.2 Consider strengths and weaknesses of possible options 3.3 Determine corrective action to remove the problem and possible future causes 3.4 Develop implementation plans identifying measurable objectives, resource needs and timelines in accordance with safety and operating procedures 3.5 Develop recommendations for ongoing monitoring and testing.
4. Communicate recommendations.	4.1 Prepare report on recommendations 4.2 Present recommendations to appropriate personnel 4.3 Follow up recommendations if required.

Range of variables

Context

The competency unit applies to a wide range of processes and equipment. Each OPS competency unit includes a problem solving element where problems specific to that competency unit are to be resolved. This competency unit is where structured problem solving techniques are to be applied more broadly, or with greater depth/rigour than is implied by the problem solving element of the OPS units.

In large plants with multiple processes, it may apply to more than one process if those processes interact with each other. It applies to all operators across all functions.

This competency unit may include the use of analytical techniques in problem solving such as:

- brainstorming
- fishbone diagrams/cause and effect diagrams
- process logic/process requirements
- logic tree
- similarity/difference analysis
- Pareto analysis
- force field/SWOT analysis
- flow charts
- control charts, runcharts and graphs
- scattergrams.

Action plans to solve problems are prepared including:

- priority requirements
- measurable objectives
- resource requirements
- methods for reaching objectives
- timelines
- coordination and feedback requirements
- safety requirements
- risk assessment
- environmental requirements.

Typical problems include:

- non- routine process and quality problems
- equipment selection, availability and failure
- teamwork and work allocation problems
- safety and emergency situations and incidents.

All operations are performed in accordance with procedures.

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

Assessment context and methods

Assessment for this unit of competency will be on an operating plant. The unit will be assessed in as holistic a manner as is practical and may be integrated with the assessment of other relevant units of competency. Assessment will occur over a range of situations which will include disruptions to normal, smooth operation.

Simulation may be required to allow for timely assessment of parts of this unit of competency (eg, element 3). Simulation should be based on the actual plant and will include walk throughs of the relevant competency components. Simulations may also include the use of case studies/scenarios and role plays.

This unit of competency requires a significant body of knowledge which will be assessed through questioning and the use of what if scenarios both on the plant (during demonstration of normal operations and walk throughs of abnormal operations) and off the plant.

Critical aspects

Evidence of satisfactory performance in this unit can be obtained by observation of performance and questioning to indicate understanding and knowledge of the elements of the competency and performance criteria.

Consistent performance should be demonstrated. In addition, look to see that:

- problems are recognised and clarified
- possible causes are identified based on experience and use of analytical techniques in solving the problem, including identifying variations and cause and effect, separating single problems from multiple problems, and the recognition of recurring problems
- fundamental cause of process or equipment faults is determined
- corrective/preventative implementation plans are developed to avoid recurrence of the problem
- implementation plan is presented to relevant personnel.

These aspects may be best assessed using a range of scenarios/case studies/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, unusual and improbable 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.

Resource implications

Assessment will require access to an operating plant over an extended period of time, or a suitable method of gathering evidence of operating ability over a range of situations. A bank of scenarios/case studies/what ifs will be required as will a bank of questions which will be used to probe the reasoning behind the observable actions.

Other assessment advice

In all plants it may be appropriate to assess this unit concurrently with relevant teamwork or operation units.

In a major hazard facility, it may be appropriate to assess this unit concurrently with:

- PMAOHS200 Participate in workplace safety procedures.

Essential knowledge

Competence includes a thorough knowledge and understanding of the process, normal operating parameters, and product quality to recognise non-standard situations.

Competence to include the ability to apply and explain, sufficient for the identification of the fundamental cause, determining the corrective action and provision of recommendations:

- relevant equipment and operational processes
- enterprise policies and procedures
- enterprise goals, targets and measures
- enterprise quality, OHS and environmental requirements
- principles of decision making strategies and techniques
- enterprise information systems and data collation
- industry codes and standards.

Key competencies

1 Collect, analyse and organise information	**2** Communicate ideas and information	**3** Plan and organise activities	**4** Work with others and in teams	**5** Use mathematical ideas and techniques	**6** Solve problems	**7** Use technology
2	1	1	2	1	2	2

Unit title

PMBMAINT303B Identify equipment faults

Unit descriptor

This unit requires the application of planning, technical knowledge and skills to check and isolate routine and non-routine equipment faults used in production, and report on the status of equipment. It applies to all sectors of the industry.

This competency is typically performed by operators demonstrating some relevant theoretical knowledge and using a range of well developed skills requiring some discretion and judgement.

This competency in practice

This competency applies to operators who are required to apply knowledge of materials, product purpose and processes to the identification and isolation of faults in equipment. The key factors are the planning, checking and identification of routine and non-routine faults, in order to return the equipment to production. It includes:

- identifying and planning scope of equipment checks
- identifying and minimising any hazards connected with materials and process
- checking settings, adjustments and performance of equipment
- checking materials for conformity to job requirements
- identifying and isolating faults in equipment
- proposing solutions and carrying out solutions within scope of authority
- completing logs and reports.

Prerequisites

This competency **has no** prerequisites

Element	Performance criteria
1. Identify scope of operational check.	1.1 Identify and classify equipment components and operating systems 1.2 Match appropriate tests and procedures to the equipment operating systems 1.3 Identify special test procedures and parameters in manufacturer's specifications and procedures 1.4 Explain the operating principles of hydraulic, pneumatic, mechanical and electrical/electronic systems as related to workplace equipment 1.5 Observe and undertake checks on the physical condition of equipment as per procedures 1.6 Record preliminary observations 1.7 Discuss test procedures with appropriate personnel and obtain necessary permission where required.

Element	Performance criteria
2. Plan operational checks.	2.1 Check specifications and notes from preliminary observations and identify areas to be clarified 2.2 Plan testing sequence/s noting areas where results and observations should be recorded 2.3 Identify safe area for testing 2.4 Make arrangements for any additional resources (including other employees).
3. Check unit through full operational range.	3.1 Undertake testing observing relevant safety and operational requirements 3.2 Confirm results and findings.
4. Identify fault and/or formulate recommendations.	4.1 Identify impact of fault on work schedule 4.2 Record proposals for equipment repair based on faults found, cost/time implications and workplace approval systems 4.3 Explain report to relevant workplace personnel including any options and recommendations 4.4 Undertake repairs where appropriate in accordance with procedures.

Range of variables:

This competency applies to all work environments and sectors within the industry. It does not include maintenance that would require trade level skills. It is not intended that this competency would cover maintenance that is carried on in a workshop.

Procedures means all relevant workplace procedures, work instructions, temporary instructions and relevant industry and government codes and standards.

The processes covered by this unit include, but are not limited to:

- predictive and preventative operational maintenance
- reactive maintenance.

Typical information sources, observed data and plant records may include:

- plant data
- log sheets
- operational and performance reports
- physical aspects such as noise, smell, feel and pressure
- condition monitoring information
- planned maintenance schedules
- standard operating procedures and plant description manuals
- manufacturer's instructions, specifications and service manuals
- machine circuit diagrams for hydraulic/pneumatic and electrical/electronic circuits.

Typical tools and equipment may include:

- hand tools specific for the task
- testing equipment
- measuring and aligning equipment.

All operations are performed in accordance with procedures.

Evidence guide:

Essential knowledge and enterprise requirements:

Knowledge and understanding of equipment operation and maintenance practices sufficient to recognise fault and no-fault conditions in standard and non-standard situations and then determine appropriate action which is consistent with operational guidelines is required.

Knowledge of the enterprise's procedures and relevant regulatory requirements along with the ability to implement them within appropriate time constraints and work standards.

Competence includes the ability for the practical completion of the job to:

- apply and/or explain:
  - principles of the operation of the equipment to be maintained
  - functions and troubleshooting of internal components and their problems
  - routine and non-routine causes of equipment failures and the service conditions which may increase maintenance
  - appropriate testing procedures and use of equipment for a range of equipment faults
  - operating principles for mechanical, hydraulic, pneumatic, electrical/electronic systems
  - urgency and timeliness factors in planning maintenance activities in relation to production requirements
- identify and select testing methods based on cost and time effectiveness
- conduct inspections, checks and tests on equipment as appropriate
- read and interpret circuit diagrams for mechanical, hydraulic, pneumatic and electrical/electronic operating systems
- use technical information and manufacturer's information to locate relevant data
- interpret technical specifications and manufacturer's instructions
- ensure workplace is safe for testing and maintenance of equipment
- identify hazards of the materials and process
- implement appropriate procedures for hazard control
- use PPE, safely handle products and materials, read relevant safety information and apply safety precautions appropriate to the task.

Critical aspects:

It is essential that the procedures be understood and that the importance of critical operational systems is known. Competence must be demonstrated in the ability to recognise potential situations requiring action and then implement appropriate action.

Consistent performance should be demonstrated. In particular look to see that:

- early warning signs of equipment in need of attention/with potential problems are recognised
- appropriate tests are undertaken and tests are analysed appropriately
- proposals for equipment repair are based upon the most appropriate and cost effective method to return equipment to full performance in a timely manner
- items initiated are followed through until final resolution has occurred.

Language, literacy and numeracy requirements:

This unit requires the ability to read and interpret typical equipment specifications schematics and diagrams.

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

Basic numeracy is required, to the level of calculating equipment throughputs and performance.

Assessment method and context:

Competence in this unit may be assessed:

- on an operating plant over a time frame which allows for operation under all normal and a range of abnormal conditions
- by use of a suitable simulation and/or a range of case studies/scenarios
- by a combination of these techniques.

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.

Resource implications:

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 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.

Key Competencies						
1 Collect, analyse and organise information	2 Communicate ideas and information	3 Plan and organise activities	4 Work with others and in teams	5 Use mathematical ideas and techniques	6 Solve problems	7 Use technology
2	1	2	2	2	2	2

Unit title

PMLTEST300A Perform basic tests

Unit descriptor

This unit of competency covers the ability to perform basic tests and/or procedures using standard methods.

Standard testing methods may be viewed as 'legal' requirements that must be followed to ensure that a product manufactured in a chemical plant meets the specification by which it is sold to the customer. Technical assistants perform tests in a quality control laboratory to ensure that material meets 'legal' requirements and the material is safe and effective in use.

For example, peroxides may be present in ether as a result of light-catalysed air oxidation. Peroxides are toxic and can give rise to mixtures which are explosive when distilled. Technical assistants test ether to ensure that the level of peroxide is within acceptable limits. The test is done by shaking ether with a solution of potassium iodide. After standing for 30 minutes in the dark the yellow colour of the aqueous phase, due to the liberation of iodine, must not be more intense than a prepared standard solution. These tests ensure the quality and safety of the ether.

Prerequisites

This unit **has no** prerequisites.

Element	Performance criteria
1. Receive, label and store samples for testing.	1.1 Label laboratory samples to ensure all required information is transcribed accurately and legibly 1.2 Register samples into laboratory system 1.3 Record sample testing requirements 1.4 Maintain sample integrity and eliminate cross-contamination.
2. Prepare sample.	2.1 Identify materials to be tested, appropriate standard method and safety requirements 2.2 Use personal protective equipment as specified for standard method and material to be tested 2.3 Record sample description, compare with specification, record and report discrepancies 2.4 Prepare sample in accordance with appropriate standard methods.

Element	Performance criteria
3. Perform tests on samples.	3.1 Check calibration status of equipment and calibrate if applicable 3.2 Perform sequence of tests to be performed as per standard method 3.3 Identify, prepare and weigh or measure sample and standards to be tested 3.4 Set up test reagents or equipment/instrumentation as per standard method 3.5 Conduct tests in accordance with enterprise procedures 3.6 Record results in accordance with enterprise procedures 3.7 Identify and report 'out of specification' or atypical results promptly to appropriate personnel 3.8 Clean and care for test equipment 3.9 Store unused reagents as required by relevant regulations and codes 3.10 Dispose of wastes in accordance with safety, enterprise and environmental requirements.

Range of variables

Context

The following variables may apply to all industry sectors covered by this Training Package.

This unit of competency describes the work conducted by supervised laboratory assistants who receive samples, prepare them for laboratory testing and perform a range of basic tests and measurements.

All operations must comply with relevant standards, appropriate procedures and/or enterprise requirements. These procedures include or have been prepared from:

- Australian and international standards, such as:
  - AS/NZS 2243.2 Chemical aspects
  - AS 2243.6 Mechanical aspects
  - AS 2243.10 Storage of chemicals
  - AS 2830 Good laboratory practice
- codes of practice (such as GLP and GMP)
- National Measurement Act
- materials safety data sheets (MSDSs)
- standard operating procedures (SOPs)
- equipment manuals
- equipment startup, operation and shutdown procedures
- calibration and maintenance schedules
- quality manuals
- enterprise recording and reporting procedures

- production and laboratory schedules
- material, production and product specifications.

All operations are subject to stringent OHS requirements. Relevant standards may include:

- sections of the occupational health and safety legislation
- enterprise safety rules and procedures
- relevant State and federal legislation
- national standards
- codes of practice.

Preparation of samples can include:

- sub-sampling or splitting using procedures such as riffling, coning and quartering, manual and mechanical splitters
- physical treatments such as ashing, dissolving, filtration, sieving, centrifugation and comminution.

Typical tests carried out by personnel at this level include:

- appearance, colour, identity
- melting points, boiling points, refractive indices, densities including compacted densities, viscosity measurements
- ashes including sulfated ashes
- Emerson class, pinhole dispersion, wet dry variation, Los Angeles abrasion, compression strength and flexural strength
- spot tests, gravimetric tests, time/temperature, texture, pH and dipsticks.

Updating information

Changes in codes of practice and applicable standards should be noted.

Evidence guide

Assessment context and methods

This unit of competency is to be assessed in the workplace or simulated workplace environment.

Critical aspects

The following aspects of competency apply to all industry sectors covered by this Training Package.

Competency must be demonstrated in the ability to receive and prepare samples, and perform tests on samples to obtain accurate and reliable results within the required timeframe. In particular, the assessor should look to see that the candidate:

- applies SOPs to efficiently prepare samples for test and analyses
- uses safety information (eg, MSDSs) and performs procedures safely
- checks testing equipment calibration status
- completes all tests within required timeline without sacrificing safety, accuracy or quality
- calculates, records and presents results accurately and legibly

- cleans and maintains equipment.

Assessment methods and resources

The following assessment methods are suggested:

- observation of the candidate performing a range of basic tests
- oral or written questioning to check underpinning knowledge of test procedures
- feedback from peers and supervisors
- examples of records and workplace documentation completed by the candidate
- analysis of results achieved by the candidate over time.

Resources may include:

- standard laboratory equipped with appropriate equipment and calibration standards
- SOPs, calibration and testing procedures.

Essential knowledge

The following knowledge requirements apply to all industry sectors covered by this Training Package.

Competency includes the ability to apply and explain:

- purpose of test
- principles of the standard method
- calibration procedures and their basis
- relevant standards/specifications and their interpretation
- source of uncertainty in measurement and methods for control
- importance and appropriate use of certified reference materials
- relevance of the National Measurement Act to laboratory measurement
- interpretation and recording of test result, including calculation of results from test data where required
- procedures for recognition of unexpected or unusual results and likely causes
- OHS procedures for sample testing.

Key competencies

1 Collect, analyse and organise information	**2** Communicate ideas and information	**3** Plan and organise activities	**4** Work with others and in teams	**5** Use mathematical ideas and techniques	**6** Solve problems	**7** Use technology
1	1	1	1	1	1	1

Unit title

BSATEM301A Negotiate with team members to allocate and complete tasks to achieve team goals

Unit descriptor

This unit covers identifying the team's goals and timelines, with the team to allocate tasks and ensuring the goals and timelines are met.

Prerequisites

- This unit **has no** prerequisites.

Element	Performance criteria
1. Clarify tasks to achieve team goals.	1.1 Clarify tasks to achieve team goals 1.2 The designated goals to be achieved are identified 1.3 Tasks required to achieve the goals are identified 1.4 Strategies and timelines to complete tasks are identified.
2. Negotiate allocation of tasks.	2.1 Individual responsibilities are negotiated and allocated 2.2 Timelines for completion of tasks are agreed upon 2.3 Resources and support necessary to complete tasks are identified and made available.
3. Monitor completion of allocated tasks.	3.1 Agreed timelines for completion of tasks are checked at regular intervals 3.2 Alternative strategies to achieve allocated tasks are negotiated when designated timelines are not being met 3.3 Support is provided to colleagues to ensure completion of allocated tasks.

Range of variables

- Enterprise procedures and policies
- Size of team
- Group goals, eg,
  - team
  - section
  - enterprise.

Evidence guide

Critical aspects

Evidence of satisfactory performance in this unit is best obtained by observation of performance, questioning and discussion.

More specifically, to indicate understanding and knowledge of negotiating with team members to allocate and complete tasks to achieve team goals in accordance with enterprise procedures and policies.

Check that:

- enterprise goals are maintained
- team members are coached and supported to achieve team goals
- timelines are agreed upon
- allocation of tasks, responsibilities and resources are appropriate
- allocated tasks are completed within timelines.

Unit Title

PSPGOV308A Work effectively with diversity

Description

This unit covers recognising and valuing individual differences in the workplace.

Prerequisites

This unit **has no** prerequisites.

Element	Performance criteria
1. Demonstrate respect for individual differences.	1.1 Differences between colleagues are recognised in accordance with workplace diversity guidelines 1.2 Behaviour demonstrates sensitivity to the differences between colleagues 1.3 Conduct complies with the requirements of anti-discrimination legislation and awareness of workplace diversity 1.4 Communication styles are modified to reflect diversity.
2. Work effectively with diversity	2.1 Workplace diversity is recognised as an asset for the organisation 2.2 Opportunities are provided for colleagues to capitalise on their special qualities or backgrounds.

Range of variables

The range of variables provides information about the context in which the unit of competency is carried out. It allows for differences between States and Territories and the Commonwealth, and between organisations and workplaces. It allows for different work requirements, work practices, and knowledge.

The range of variables also provides a focus for assessment and relates to the unit as a whole.

Individual differences may include:

- culture
- religion
- race
- language
- gender
- sexual preference
- physical differences
- politics
- expertise
- experience/working styles
- age

- thinking styles/learning styles/intellectual differences
- interpersonal approach
- interests.

Colleagues may include:

- peers
- junior staff
- internal stakeholders
- external stakeholders/clients/customers
- supervisors and management

Evidence guide

Critical aspects of evidence

- integrated demonstration of all elements of competency and their performance criteria; and
- knowledge of anti-discrimination legislation and codes of conduct
- establishing rapport with all colleagues.

Underpinning knowledge

- anti-discrimination legislation
- principles of cultural awareness
- EEO, equity and diversity principles
- codes of conduct.

Underpinning skills

- cross cultural communication
- interpersonal communication
- cross cultural competence, including gender and disability.

Resource implications

This unit of competency should be assessed in the workplace, but in the event that there is no access to a workplace a simulated workplace can be used but such simulation must replicate workplace conditions in terms of performing the task; managing a number of different tasks; coping with irregularities and breakdowns in routine; dealing with the responsibilities and expectations of the workplace, including working with others; and transferring competency to new workplace situations

Consistency of performance

- knowledge and performance to be assessed over time to confirm consistency

Context/s of assessment

This competency should be assessed on the job where possible.

Unit title

PUAFIR306A Render hazardous materials incidents safe

Unit descriptor

This unit covers the competency required to safely combat incidents involving hazardous materials.

'Hazardous Materials' is a generic term used to refer to an incident involving dangerous goods and hazardous substances.

Element	Performance criteria
1. Identify and handle hazardous materials.	1.1. Pre-incident plans, site control and containment plan and directives from supervisor are identified and implemented 1.2. Personal protective clothing and equipment appropriate to the types of hazards reported, are selected and worn Start up individual items of equipment and the entire compressor system 1.3. The incident is approached using care and caution and a safe distance is maintained in accordance with the organisation's procedures and/or advice from appropriate authorities 1.4. Dangerous goods and hazardous substances are identified from a safe distance and information conveyed to the supervisor in accordance with the organisation's procedures 1.5. Information on hazards and handling procedures for the identified substance is obtained in accordance with the organisation's procedures 1.6. Suitability of personal protective clothing and equipment is re-assessed in accordance with information received 1.7. Dangerous goods and hazardous substances are handled according to the organisation's procedures 1.8. Assistance is provided in obtaining samples according to procedures and/or advice from other authorities

Element	Performance criteria
2. Assist with establishing hazard control and decontamination zones	2.1. Individual's responsibilities within the organisation's control plan are identified and followed 2.2. The scene is secured and hazard control and decontamination zones are established according to the organisation's procedures 2.3. Evacuation procedures are implemented, if directed, to protect life in accordance with the organisation's procedures 2.4. Assistance is provided to control personnel and equipment entering and leaving hazard control and decontamination zones in accordance with the organisation's procedures 2.5. Records are kept of personnel and equipment as they enter and leave hazard control and decontamination zones
3. Contain and recover hazardous materials	3.1. Appropriate containment strategies and resources are identified and implemented 3.2. Identify possible options to meet plant requirements 3.3. Hazardous materials are diluted and/or contained in accordance with procedures and/or advice from appropriate authorities 3.4. Hazardous materials are recovered from the incident site according to guidelines and procedures from the appropriate authorities
4. Assist with decontaminating personnel and equipment	4.1. Personnel and equipment are decontaminated immediately following contamination, or possible contamination in accordance with the organisation's procedures and Occupational Health and Safety guidelines 4.2. Operations are completed, equipment collected, decontaminated and cleaned where appropriate and serviced in accordance with the organisation's procedures 4.3. Contamination incidents are recorded and reported to the appropriate personnel in accordance with the organisation's procedures

Range of variables

Identification of hazardous materials must include:

- Hazmat information
- United Nations numbers
- proper shipping names
- product names or trade names
- chemical names and chemical abstract service numbers
- dangerous goods class labels
- packing groups
- emergency information panels
- placarding

- storage manifests
- transport documents
- visual signs and chemical indicators
- colour coding (e.g. gas cylinders)

Hazardous materials information sources must include:

- HAZCHEM Emergency Action Codes
- emergency procedures guides
- material safety data sheets
- technical specialist

and may also include:

- emergency response guide books
- National Fire Protection Association Codes
- European Marking ADR hazard identification numbers
- electronic databases
- HAZMAT Action Guides
- safe storage and information handling

Control zones must include:

- area of likely contamination (hot zone)
- area of operations (warm zone)
- support zone (cold zone)

Procedures must include:

- organisation procedures

and may also include:

- OHS practices and procedures
- government organisational procedures
- company or organisational procedures
- emergency management
- evacuation
- environmental
- gas plume modelling

Equipment for containment and recovery may include:

- Hazbins hazardous materials recovery bins
- sealable drums
- original containers
- shipping containers
- absorbent materials
- protective clothing and equipment
- plugs and patches
- booms
- pipes
- extraction equipment and machinery
- hand implements
- earth moving equipment
- spraying equipment
- pumps
- non-sparking tools
- intrinsically safe tools

Neutralising and diluting agents may include:
- water
- acids and bases
- bicarbonate of soda
- lime

Decontamination must include:
- wet decontamination techniques
- combination of wet and dry
- dry decontamination techniques
- decontamination techniques
- emergency decontamination

Decontamination areas must include:
- holding area
- wash area
- disrobing and rest area

Sampling may include:
- gaseous samples
- liquid samples
- solid samples

Analysis may involve:
- sampling equipment
- external organisation assistance

Organisations that assist operations may include:
- police
- ambulance
- local government
- chemical companies
- emergency services
- government departments

Evidence guide

Critical aspects of evidence

It is essential for this unit that competence be demonstrated in:
- hazardous materials identification
- implementing appropriate standard operating procedures
- compliance with relevant legislation
- demonstration of safe working practices
- assisting in the establishment of incident control
- containing and recovering hazardous materials
- undertaking decontamination procedures.

Interdependent assessment of units

Prerequisite units:
- PUAFIR201A Prevent injury

Co-requisite units:

- PUAFIR308A Employ personal protection at a hazardous material incident

Underpinning knowledge

- organisation policies and procedures
- legislation relevant to the organisation
- roles and responsibilities of agencies involved
- types of hazards and safe handling techniques
- methods of identifying hazardous materials
- principles of incident control
- decontamination principles and procedures
- containment techniques
- breathing apparatus procedures
- the nature and properties of hazardous materials

Underpinning skills

- follow instructions and procedures
- use relevant equipment
- record information
- work as member of a team
- hazard assessments
- appropriate control techniques
- breathing apparatus procedures

Resource implications

Assessment of this competency will require access to relevant transport, communication and Hazmat equipment

Consistency of performance

Evidence will need to be gathered over a period of time across a range of variables appropriate to organisation roles.

Context of assessment

Simulations or exercises and/or a series of tasks are required to demonstrate competence in this unit. This may involve setting scenarios to be completed either individually or as a member of a team. Written or verbal questions should be used to support gathering of evidence.

Unit title

PUASAR003A Undertake technical rescue

Unit descriptor

This unit covers the competency to undertake technical rescue operations as a member of a team.

Element	Performance criteria
1. Prepare for technical rescue	1.1. Equipment is checked and serviced to ensure it is ready for use 1.2. Operation and task information is obtained and analysed 1.3. Rescue equipment is selected based on incident information 1.4. Personal protective equipment is selected relevant to the nature of the rescue operation.
2. Assess and manage technical rescue	2.1. Physical features of rescue scene are assessed before deploying rescue resources 2.2. Rescue scene is manage to control access and maintain a safe and effective operational environment 2.3. Communication with other personnel on site is established and maintained 2.4. Situational and environmental hazards are assessed, minimised and controlled 2.5. Specialist rescue resources are accessed based on the assessment of the incident.
3. Manage casualties	3.1. Casualties are assessed and stabilised to minimise further injury or discomfort during rescue operations 3.2. Nature of injuries/entrapment is ascertained to develop an extrication plan 3.3. Support is provided to medical personnel assisting with the treatment of the entrapped person/s as required
4. Establish and maintain rescue scene safety	4.1. A safe working area is established and maintained to prevent injury to self and others 4.2. Hazards are monitored during the rescue operation to prevent injury to self and others 4.3. Scene management procedures are followed in accordance with team leader instructions and organisational procedures 4.4. The incident scene is prepared to facilitate the prompt and safe rescue of causalities.

Element	Performance criteria
5. Carry out technical rescue operations	5.1. Liaise with primary response team and other relevant personnel 5.2. Additional technical equipment is employed to make incident scene safe 5.3. Access plans are determined with consultation team leader, medical staff and other technical staff 5.4. Procedures are implemented to protect casualty/s from further injury or discomfort during access and removal 5.5. An access path is provided for the removal of casualty/s using appropriate rescue techniques ad equipment 5.6. Casualty/s are rescued using appropriate techniques and equipment to the incident/environment.
6. Terminate specialist rescue operations	6.1. Incident scene is preserved for investigating officers 6.2. Equipment is recovered, cleaned and serviced in accordance with manufacturer's guidelines and organisational standards prior to leaving the scene 6.3. Signs and symptoms of operational stress in self and others are recognised and reported to appropriate personnel. 6.4. Operational documentation is completed to organisational standards.

Range of Variables

Operation and task information may include:

- location
- type and number of casualties
- type and magnitude of incident
- environmental and other hazards
- other agencies responding

Rescue equipment may include:

- air operated equipment
- low pressure air bags
- excavating equipment
- mobile cranes
- heavy lifting hydraulic tools
- support vehicles
- pneumatic hydraulic mechanical electrical tools
- firefighting equipment
- patient protection equipment
- hot cutting equipment
- beacons, signs
- lighting equipment
- other specialist equipment as required

Personal protective equipment may include:

- protective clothing

- helmets
- ear protection
- eye protection
- infection protection

Hazards may include:

- electricity
- gas
- water and sewerage utilities
- hazardous materials/dangerous substances
- equipment power/drive systems
- vehicle fuel systems
- difficult terrain
- adverse weather
- mobile property
- convergence
- bio-hazards
- electrical and mechanical moving machinery
- dusts

Scene management procedures may include:

- control of bystanders and media
- cordoning and screening scene
- searches for missing occupants
- access and egress
- removal of hazards
- consider preserving evidence
- staging areas
- positioning of vehicles
- liaison with relevant technical personnel

Technical rescue incidents may involve

- heavy industrial equipment
- shipping containers
- industrial/construction incidents
- industrial machinery entrapments
- agricultural machinery
- elevators/escalators
- heavy plant and equipment
- tower cranes
- rail transport
- heavy transport vehicles

Operational documentation may include:

- personnel attending/hazard exposure report
- airs report
- incident field notes
- incident report
- post operational report

Evidence Guide

Critical aspects of evidence

Ability to extricate casualty/s; minimising further injury or discomfort while conducting rescue operation.

Interdependent assessment of unit

Pre-requisite units: PUASAR002A Undertake road accident rescue

Co-requisite units: Nil

Underpinning knowledge

- relevant legislation
- organisational policies & procedures
- relevant OHS principles and practices
- rescue equipment
- manufacturer's operational guidelines
- emergency care
- use of personal protective equipment
- situational awareness
- basic principles of rescue
- symptoms of physical/emotional stress
- knowledge of equipment available and its function

Underpinning skills

- communicate
- work in a multi-agency team environment
- identify symptoms of physical/emotional stress
- use rescue equipment
- decision making
- problem solving

Resource requirements

Assessment may require resources to simulate a range of rescue incidents that may be encountered.

Consistency in performance

Evidence should be gathered over a period of time in a range of actual or simulated workplace environments.

Context of assessment

Evidence of competent performance should be obtained by observing an individual in a simulated rescue environment.

Unit title

PUASAR004A Undertake vertical rescue

Description

This unit covers the competency to undertake vertical rescue operations as a member of a rescue team.

Element	Performance criteria
1. Prepare for and respond to vertical rescue	1.1. Operation and task information is obtained and analysed 1.2. Vertical rescue equipment is selected based on incident information and checked to ensure it is ready for use 1.3. Personal protective equipment for vertical rescue is selected 1.4. Scene reconnaissance is conducted and results are reported 1.5. Appropriate actions are taken to preserve incident scene.
2. Assess scene	2.1. Physical and environmental features of scene are assessed before deploying rescue resources 2.2. Access is controlled and a safe and effective operational environment is maintained 2.3. Communication with other personnel on site is established and maintained.
3. Establish vertical rescue system	3.1. Rescue system is constructed according to the type of incident 3.2. Anchors are established and monitored 3.3. Equipment is prepared and techniques are used in accordance with manufacturer's guidelines and organisational procedures.
4. Perform vertical rescue	4.1. Access is gained to casualties or trapped persons using organisationally approved techniques and equipment 4.2. Casualties or trapped persons are secured and prepared for removal in consultation with medical personnel 4.3. Casualties are removed using vertical rescue techniques and equipment whilst preventing further injury.
5. Terminate vertical rescue operations	5.1. Equipment is recovered, cleaned and serviced in accordance with manufacturer's guidelines and organisational standards 5.2. Where identified, signs and symptoms of operational stress are recognised and reported 5.3. Operational debrief is conducted and documentation is completed to organisational standards.

Range of variables

Operation and task information may include

- number and type of casualties
- location
- magnitude and type of incident
- access and egress routes
- weather conditions and forecasts
- potential hazards
- command, control and coordination arrangements
- other organisations

Systems may include

- lowering
- hauling
- high line or tyrolean
- edge management

Vertical rescue equipment may include

- rescue rope to AS41423
- tapes
- slings
- pulleys
- edge protection
- karabiners
- ascending and descending devices
- anchors
- stretchers
- lighting and generator
- specialist communications equipment
- binoculars
- edge management devices

Physical and environmental features may include

- ground stability
- anchor points
- clearances
- tides/waves/surf movements
- exposed or hazardous electrical conductors
- moving machinery
- greasy or oily surfaces
- hot surfaces
- unstable structures
- exhaust or steam outlets
- air quality
- high winds
- cold rain
- swift water

- loud noises
- fuels and chemicals
- irrespirable atmospheres
- physical features such as slopes, loose surfaces, sheer face, overhangs

Vertical rescue environments may include

- cliffs
- towers
- structures
- trees
- mines and caves and shafts

Vertical rescue techniques will be determined by

- the type of vertical rescue system adopted
- organisation's policy and procedures

Scene management may include

- establishing barriers and perimeter access controls
- management of bystanders and media
- establishing and monitoring safety zones
- media liaison
- crime scene preservation

Operational documentation may include

- organisational procedures and related legal requirements
- equipment running logs
- vehicle logs
- notes
- sketches

Evidence guide

Critical aspects of evidence

It is essential for this unit that competence is demonstrated in establishment of safe systems to gain access to and recover casualties; extrication of casualty minimising further injury or discomfort while conducting rescue operation; and application of safe work practices

Interdependent assessment of units

Prerequisite units:

- PUASAR001A Participate in rescue operations

Co-requisite units:

- PUATEA002A Working autonomously

Underpinning knowledge

- relevant legislation
- emergency management and interagency arrangements
- organisation's procedures for operating vertical rescue equipment
- vertical rescue concepts and practices
- relevant OHS principles and practices

- voice, whistle and other communication systems
- casualty assessment and packaging
- equipment characteristics
- braking strains
- safety factors and safe working loads
- operational briefing and debriefing procedures
- signs and symptoms of operational stress
- personal hygiene protocols
- reconnaissance techniques

Underpinning skills

- work in a team
- use personal protective and rescue equipment within its safe work limitations
- disaster victim identification procedures
- working in a multi-service environment
- scene assessment and reporting
- wearing appropriate personal protective and rescue equipment correctly
- safe and effective scene management procedures
- establish, monitor and maintain safe anchor systems
- establish, maintain, monitor and use:
  - abseil
  - belay
  - ascent
  - descent and raising and lowering systems
- manage edge protection
- treat and package casualties
- escort stretchers in raising and lowering operations
- check, service and maintain vertical rescue equipment
- operate span line or tyrolean
- infection control

Resource requirements

Assessment of this competency requires access to an appropriate training/venue for vertical rescue activities; organisation's vertical rescue equipment and personnel for team-based activities.

Consistency in performance

Evidence should be gathered over a period of time in a range of actual or simulated workplace environments.

Context of assessment

Evidence is to be collected in a range of simulated or actual vertical rescue environment.

