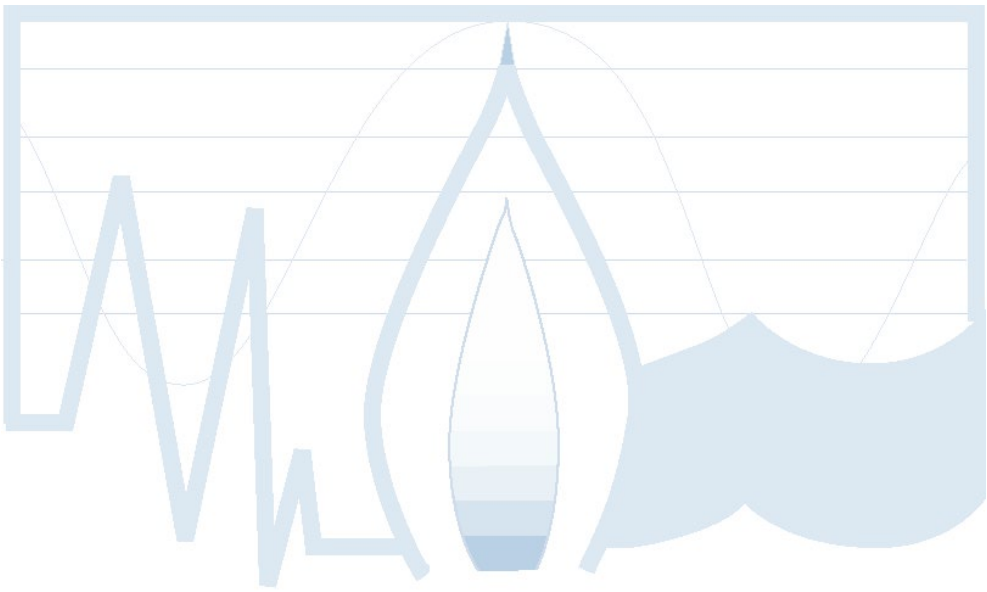

Electricity Supply Industry
Generation Training Package
UTP98
V2.00

Volume 2

Units NEG001 - NEG073

Level 11, AMP Place
10 Eagle Street
BRISBANE QLD 4000
Phone: (07) 3246 2300
Fax: (07) 3246 2490

This version prepared by:
Australian Training Products Ltd
Level 25 / 150 Lonsdale St, Melbourne , 3000
PO Box 12211 A'Beckett St Post Office
Melbourne, Victoria 8006, Australia
Telephone +61 3 9655 0600
Facsimile +61 3 9639 4684
E-mail: sales@atpl.net.au

First Published October, 1998

STOCKCODE: 9840003S

ISBN: 0 642 79688 2 (set)

Generation Training Package-UTP98: V2.00 (Volume 1 of 2 Volume set)

Printed for Australian Training Products Ltd by Mercury Printeam, Melbourne, Australia

AESharenet: P
Version 1.00
November, 2001

TABLE OF CONTENTS

Glossary

Advanced

High degree of knowledge and skill as would be demonstrated by an 'expert' operative (highly developed analytical, conceptual and problem solving skills).

Alkalinity Reduction

Process of controlling pH of cooling system waters to offset increasing alkalinity due to carbon dioxide loss. Required to maintain optimum pH for effective chlorination and plant protection. Usually done by sulphuric acid injection.

Analysis

Resolution of data into understandable information and its subsequent rational interpretation.

Apparatus

Equipment used in the Power Generation processes.

Ash

Residue of combustion and, in particular, the bottom ash of pulverised fuel combustion.

Assemble

Refers to: the selection, visual inspection, placement and securing of components to form an item of plant, equipment or a structure

Assessment

Refers to: diagnosis of performance, classification of eligibility, award of credentials, assurance of progress of learning.

Auxiliary Steam System

Steam used to assist the generation process, i.e. air extraction, gland sealing etc.

Basic

Fundamental and simplest application.

Batching (Chemicals)

Mixing required quantities of chemicals predominantly for water treatment.

Boiler

Vessel for producing steam under pressure (generic).

Plant used in power production is of large voluminous construction that produce large volumes of high pressure steam required for the thermal power generation process. These boilers contain several stages of superheating and may also contain reheating elements.

Brine Concentrator

Plant for concentrating salts in discharged cooling waters, purifying the majority of water for re-use.

Bulk

Large quantity.

Chemicals

Chemicals used in the power generation processes.

Clean

Make site, buildings, plant and equipment safe, tidy and clear of obstructions (including dirt and grime).

Codes of Practice

Refers to: those relevant standards required within Australia.

Commissioning

Activities carried out to make plant ready for normal operation.

Communications

Conveying information by an approved medium.

Competency

The ability to exercise knowledge and skill in the process of carrying out required tasks/duties.

Component

Any self-contained part, combination of parts, subassemblies of units, which perform a distinctive function necessary to the operation of a system.

Compressed

Reduced in volume.

Condensate System

Part of a generating unit's steam/water cycle, in particular the low pressure water system from the condenser hot well to the boiler feed pump suction including pumps, low pressure feed water heaters, air ejectors, water treatment plants, de-aerators etc.

Condenser

Chamber beneath a turbine's low pressure cylinder(s) in which steam is condensed to water.

Condensing

Make denser or more compact. Main application in the generation industry is the condensing of steam to water.

Condition Changing

Voltage control. Apparatus may include tap changers, reactors and synchronous condensers.

Condition Monitoring

Process of measuring key performance characteristics of an item of equipment on a continuous or regular basis, usually for the purpose of optimising maintenance requirements.

Conduct

1. Manner of doing business or work.

2. Transmission of heat or power.

Contaminated

Polluted. Degradation from a pure or desired state.

Cooling Systems

Various methods of controlling temperature rise in plant by the transfer of heat to a cooling medium during the power generation process.

Coordinate

Cause to function and/or link together in a proper order.

Crisis

Time of danger, acute risk to system or plant, possibility of imminent failure or collapse.

Critical

1. An incident that involves risk and suspense that may require a decisive and crucial response.

2. Sequence of stages determining minimum time needed for an operation (critical path).

Decommission

Remove from service permanently or for a long period of time.

Defect

Any confirmed abnormal condition of an item whether or not this could eventually result in a failure.

Desired

Want earnestly, bordering on required or necessary. The preferred option.

Diagnose and Repair

Refers to corrective maintenance which is the recognition, location and rectification of faults.

Direct (work)

Set direction/requirements and instruct or allocate staff to achieve the required outputs.

Distribution System

Integrated electricity supply system.

Dogging

Attachment of, and the direction of, the lifting of materials in conjunction with a manned crane or hoist.

Drawings

Refers to: block, wiring, PID, schematic, layout drawings and site plans.

Draft System

Plant used to supply adequate air for combustion. Plant may include: fans, air heaters dampers etc.

Dust

Main application: fly ash that is collected in either electrostatic precipitators or fabric filters.

Efficiency

Maximising plant performance by operating to designed parameters.

Electronic Equipment

Refers to: equipment where the majority of its components are electronic.

Emergency Response

Responding to a sudden state of danger or a condition needing immediate treatment.

Enterprise

Refers to electricity generators and their procedures and standards which can refer to isolation/permit procedures, station/depot instructions, work orders and agreed quality assurance requirements.

Environment

The area surrounding the work site which can be directly or indirectly affected by occurrences at the work site. It includes the atmosphere, soils, drains, underground water tables and the ecosystem. Protection of the *environment* would require the proper disposal of waste materials, restriction of burning off, the correct handling of toxic substances, the containment of CFCs and the like.

The protection of the environment would also include the minimisation of those factors that contribute, directly or indirectly, to the production of greenhouse gases.

These contributing factors might include the minimisation of construction waste materials, the correct use of enterprise vehicles and machinery, the re-use or recycling of trade materials where possible and the overall reduction of energy usage through general awareness and the use of appropriate technologies.

Environmental Control

Protection of the surrounding environment. See also *environment*

Erect

Refers to: the actions of preparing foundations, the erection and stabilisation of structures and the placement of electrical equipment.

Explosive Power Tool

Ram set gun or similar tools.

External

Areas external to the power generation site.

Fabricate

To take raw stock and make detailed parts by a variety of methods, such as cutting, bending, attaching, etc. It may be applied to metal and composite structures, electrical parts, etc.

Facilitating

Promote or help forward.

Feedwater

High pressure and high temperature treated water supplied to a boiler.

Feedwater System

Part of a generating unit's steam/water cycle, in particular the high pressure water system from the feed pump suction to the boiler including pumps, economiser high pressure feed water heaters, feedwater regulating valves etc.

Field (operations)

External to the main centre of operation.

Fork Lift

Vehicle with fork in front for lifting and moving materials.

Fuel

Used for combustion and may include coal, gas, oil, refuse etc.

Generation

Production of electricity.

Hardware

Refers to: material or non-moving parts of systems including such items as insulators. "Hardware" does not include electrical apparatus.

High Voltage

Equal to, or greater than, 1000 volts AC or 1500 volts DC.

HV

High Voltage.

HV Apparatus

Equipment used for transportation and control of electricity.

Implement

Put into effect.

Inspect

To examine or check a system, assembly, component or part by visual or physical means for the purpose of identifying defects or limits.

Inspection

Examine closely.

Install

Refers to: the fitting and positioning of new plant, equipment and/or systems, and the replacement of plant, equipment and/or systems following overhaul or maintenance.

Intermediate

Skills and knowledge greater than a basic level but with room for further development available (experienced but not yet expert).

Internal

Areas internal to the power generation site.

Internal Combustion Duel Fuel Reciprocating Engine

Engine having two fuel sources (normally diesel fuel and gas).

Internal Combustion Single Fuel Reciprocating Engine

Engine having one fuel source.

Isolated Power Systems

Power systems not connected to a power grid, ie Alice Springs.

Key Role

Essential or of vital importance.

Lay

Refers to: the placement in position of underground cables in preparation for jointing and terminating.

Liaise

Communicate and cooperate with an outside organisation, section or person.

Lifting and Load Shifting Equipment (1)

Cranes and hoists that do not require a licence to operate.

Lifting and Load Shifting Equipment (2)

Cranes and hoists that do require a licence to operate.

Local

Controlling equipment from controls located adjacent to an item of plant.

Locomotive

A diesel or steam engine providing the motive power to haul load-carrying wagons.

Low Voltage

Not exceeding 1000 volts AC or 1500 volts DC.

Lubrication

Minimisation of friction by the application of specified oils or greases.

LV

Low Voltage.

Maintain

Refers to: preventative maintenance and the replacement of damaged or faulty components found during preventative maintenance.

Make and Spread (stockpile)

The formation of, and the management of, a stockpile (usually coal).

Manage (plant operations)

Planning, preparing, organisation and actual operation of major plant startups or shutdowns plus the in service control of normal and abnormal plant operating conditions.

Manoeuvering

Planned and controlled movements towards a defined objective.

Material

Matter used in the power production processes including raw, processed, building plant or offices materials.

Maximum

Highest allowable limit.

Minimum

Lowest allowable limit.

Modify

Refers to: alterations, additions, adjustments or re-adjustments to existing equipment

Monitor

Maintain regular surveillance (see also ‘condition monitoring’).

Network

Chain of interconnected electrical conductors, integrated electricity grid system.

Non-Routine

Outside normal daily operations or practices.

Occupational Health and Safety Standards

Refers to: those which are relevant within Australia.

Operate

Bring about a controlled change in plant output.

Operational

Be able to operate or function.

Operator (power generation)

Personnel employed to operate, monitor and control power generation plant.

Organise

Give orderly structure to, make arrangements for or initiate (undertaking).

Others Involved In Or Affected By The Work

Refers to: supervisor, foreperson, other tradespersons, operations personnel and other workers.

Outage

Period of non-operation.

Perform

Carry into effect, execute (operation).

Performance Testing

Check of plant output under test conditions.

Permit to Work

Written approval to work (in safety and in a clearly defined area).

Plan

Formulated or organised methods by which actions are to be done in order to achieve a defined objective or outcome.

Plant

1. Apparatus associated with power production.

2. Mobile plant i.e. implements and vehicles.

Power

Electrical energy.

Process

Controlled course of actions to achieve a required output/outcome.

Production

Produce (electrical energy) in large quantities.

Promote

Help forward, encourage.

Protection Devices/Schemes

Devices, or a number of devices working together, to protect plant and equipment from damage during fault conditions or out of limits operations.

Plug-In Printed Circuit Boards

Refers to: the placement of individual plug-in printed circuit boards, regardless of whether the connections are plugs or soldered, which do not require any additional setting up/tuning.

Quality

Maintaining a high degree of excellence (meeting requirements/standards).

Receive

Accept delivery of (coal).

Reclaim

Recover (coal) from stockpile.

Record

Piece of recorded information, account or fact preserved in a permanent document or electronically.

Rectification

1. Converting AC to DC .

2. Process of repairing faults or failures of equipment or systems.

Regulatory Authority

Refers to: any organisation or department which has a responsibility for establishing and monitoring adherence to procedures, specifications or standards within the Generation sector.

Reliability

May be relied upon (to continue producing). Measure of the probability of failure.

Relocating

Move to a new position.

Request/Work Orders

Refers to: work generated by schedules, instructions, handover details from previous shift, inspection test plant, defect cards, danger tags.

Requirements

That to which *equipment* and procedures and their outcomes must conform and includes statutory obligations and regulations and *Standards* called-up by legislation or regulations. *Requirements* may include:

- codes of practice
- job specifications
- *Standards* called-up in specifications
- procedures and work instructions
- quality assurance systems
- manufacturers' specifications
- design specifications
- customer/client requirements and specifications
- specified underpinning knowledge (specified in units' Evidence Guides)
- National and State guidelines, policies and imperatives relating to the *environment.*

Reverse Osmosis

Process of removing chemicals from (usually) water by forcing it through a semi permeable membrane using high pressure.

Rigging

Set up slings etc. to ensure a controlled lift of materials by hoists and/or cranes.

Ringmain

Distribution systems for either water, steam or power supplies in the form of a continuous ring.

Risk

Exposure to danger, hazards, losses etc.

SCADA Control

System Control And Data Acquisition system. Screen based remote monitoring and control of a process/acquisition system.

Scaffold

Temporary elevated platform to assist or enable access for inspection or maintenance requirements.

Schedule

Planned output (generation).

Service

Refers to: procedural maintenance which would, in general, be of a routine nature.

Set-up

Refers to: specifications set by manufacturers', client/user requirements.

Shift (material)

Change or move from one place to another.

Shunting

1. Procedure for warming de-aerator.

2. Divert (train) onto a side track to clear the line.

Site

Location of power generation plant.

Stakeholders

Those who have an influence on activities (power generation).

Standard

1. Degree of excellence required for a particular purpose.

2. Required quality of work.

Statutory requirements

Refers to: those standards required by the relevant regulatory or licensing authority eg. Worksafe Australia, SAA Wiring rules.

Steam/Water Cycle

Major or main cycle of steam and water through a boiler and/or steam turbine. Includes valves piping, heat exchangers, superheat and reheat elements, boiler drum(s) etc.

Stockpile

Accumulated stock of raw materials (mainly coal).

Strategies

Plans formed to achieve specific outcomes.

String

Refers to: the placement of aerial conductors/cables in position, including tensioning.

Structure

Refers to: a pole or tower with associated hardware which supports electrical apparatus.

Switchboard

A combination of cubicles or switches located together that enable the connection or disconnection of electrical circuits.

Switchgear

Apparatus designed to make or break electrical connections.

Systems

Systems in the generation industry means the interaction between a number of elements requiring consideration of the total effect of the parts, rather than a concentration on any single part, and in respect of which actions and responses that are needed, may require analytical skills and techniques.

Tasks

Single items of work.

Team

People working together in a cooperative/collaborative manner.

Technical Inspection

Examine closely, utilising specific criteria relevant to the apparatus concerned.

Test

Refers to: testing and/or functioning (operating) an assembly, component or part to make sure that it agrees with the applicable specifications. In this definition testing provides a way in which adjustment and/or troubleshooting/diagnosis can occur.

Test and Commission

Refers to: the checking of individual equipment/components for correct operation and the placement into service of the equipment or system.

Test (operational)

Operate under a strictly controlled manner to check/determine the condition of an item of plant. This may include a complete system, a complete item of plant (i.e. boiler fan) or an individual component.

Tippling

Discharging of coal (or other material) from a railway wagon.

Tools

Refers to general hand tools, portable electric tools and specialist tools.

Transfer (material)

Move or relocate.

Transformers

Apparatus for reducing or increasing voltage in an AC system.

Transport Plant and Equipment

Moving mobile plant and associated equipment.

Tune

Refers to: correcting or altering a system, circuit, components or indicators to provide a specified outcome or condition.

Turbine

Wheel or rotor driven by the impact or reaction of steam or water (generic). Main plant item in thermal or hydro power production consisting of a number of stages. May include a number of turbines connected in tandem.

Undertake

Be committed to perform, or take responsibility for, work, testing etc.

Waste

Substances of no further use in the power production process, i.e. ash.

Water Quality Control System

System(s) utilised to continually monitor and adjust the quality of water used in the power generation process.

Water Treatment

The treatment processes used to condition raw water to make it suitable for use in the power generation processes.

Wind Generator

Device to convert air currents into electrical energy.

Work Completion Details

Refers to: time sheets, job cards, plans and records.

UTP NEG001 A

Manage/Monitor Occupational Health and Safety - Level A

Descriptor: Follow defined occupational health and safety policies and procedures related to the work being undertaken in order to ensure own safety and that of others in the workplace

Element		Performance criteria	
001.1	Follow workplace procedures for hazard identification and risk control	001.1.1	Hazards in the work area recognised and reported to designated personnel according to workplace procedures
		001.1.2	Workplace procedures and work instructions for controlling risks are followed accurately
		001.1.3	Workplace procedures for dealing with accidents, fires and emergencies are followed, whenever necessary, within scope of responsibilities and competencies
		001.1.4	Where appropriate, the teams and individuals roles and responsibilities within the team are identified, and, where required, assist in the provision of on-the-job training
001.2	Contribute to participative arrangements for the management of occupational health and safety	001.2.1	Occupational health and safety issues are raised with designated personnel in accordance with workplace procedures and relevant occupation health and safety legislation
		001.2.2	Contribute to participative arrangements for occupational health and safety management in the workplace within organisational procedures and scope of responsibilities and competencies

Range Statement

Stream: Production Plant

Field: Core

Equivalencies N/A

This unit describes generic occupational health and safety competencies applicable for employees without supervisory or managerial responsibilities

It involves application of relevant occupational health and safety legislation and codes of practice, including duties and responsibilities of all parties under the general duty of care

Relevant workplace procedures will include hazard policies and procedures; emergency, fire and accident procedures; procedures for the use of personal protective clothing and equipment; hazard identification and issue resolution procedures; and job procedures and work instructions.

Evidence Guide

Critical aspects of evidence

Competence is demonstrated in the context of provision to employees of clear directions and information and work instructions

Evidence of knowledge of significant hazards in the workplace is required

Evidence of understanding of symbols used for occupational health and safety signs is required

Competence may need to be assessed in conjunction with units relating to communication competencies, particularly those relating to information provision

Context of assessment

Competency Standards should be assessed on site or in a simulated work environment under the normal range of workplace conditions

Interdependent assessment of unit

Nil

Knowledge and Skills

A knowledge of:

Relevant occupational health and safety regulations; Relevant statutory legislation; Relevant enterprise/site safety procedures; Enterprise/site emergency procedures and techniques; Environmental legislation; Plant status

The ability to:

Apply relevant occupational health and safety regulations; Apply relevant statutory legislation; Apply relevant enterprise/site safety procedures; Apply enterprise/site emergency procedures and techniques; Apply enterprise recording procedures; Locate and/or identify relevant plant and equipment; Identify plant status; Communicate effectively.

UTP NEG002 A
Manage/Monitor Occupational Health and Safety – Level B

Descriptor: Implement and monitor the organisation's occupational health and safety policies, procedures and programs in the relevant work area to achieve and maintain occupational health and safety standards

Elements		Performance criteria	
002.1	Provide information to the work group about occupational health & safety and the organisation's policies, procedures and programs	002.1.1	Relevant provisions of occupational health and safety legislation and codes of practice are accurately and clearly explained to the work group
		002.1.2	Information on the organisation's occupational health and safety policies, procedures and programs is provided in a readily accessible manner and is accurately and clearly explained to the work group
		002.1.3	Information about identified hazards and the outcome of risk assessment and risk control procedures is regularly provided and is accurately and clearly explained to the work group
		002.1.4	Where appropriate, the teams and individuals roles and responsibilities within the team are identified, and, where required, assist in the provision of on-the-job training
002.2	Implement and monitor participative arrangements for the management of occupational health and safety	002.2.1	Organisational procedures for consultation over occupational health and safety issues are implemented and monitored to ensure that all members of the work group have the opportunity to contribute
		002.2.2	Issues raised through consultation are dealt with and resolved promptly, or referred to the appropriate personnel for resolution in accordance with workplace procedures for issue resolution
		002.2.3	The outcomes of consultation over occupational health and safety issues are made known to the work group promptly

Elements		Performance criteria	
002.3	Implement and monitor the organisation's procedures for identifying hazards and assessing risks	002.3.1	Existing and potential hazards in the work area are identified and reported so that risk assessment and risk control procedures can be applied
002.4	Implement and monitor the organisation's procedures for controlling risks	002.4.1	Work procedures to control risks are implemented and adherence to them by the work group is monitored in accordance with workplace procedures
		002.4.2	Existing risk control measures are monitored and results reported regularly in accordance with workplace procedures
		002.4.3	Inadequacies in existing risk control measures are identified in accordance with the hierarchy of control and reported to designated personnel
		002.4.4	Inadequacies in resource allocation for implementation of risk control measures are identified and reported to designated personnel
002.5	Implement the organisation's procedures for dealing with hazardous events	002.5.1	Workplace procedures for dealing with hazardous events are implemented whenever necessary to ensure that prompt control action is taken
		002.5.2	Hazardous events are investigated to identify their cause in accordance with investigation procedures
		002.5.3	Control measures to prevent recurrence, and minimise risks of hazardous events, are implemented, based on the hierarchy of control if within scope of responsibilities and competencies, or alternatively referred to designated personnel for implementation
002.6	Implement and monitor the organisation's procedures for providing occupational health and safety training	002.6.1	Occupational health and safety training needs are identified accurately, specifying gaps between occupational health and safety competencies required and those held by work group members
		002.6.2	Arrangements are made for fulfilling identified occupational health and safety training needs in both on and off-the-job training programs in consultation with relevant parties

Elements		Performance criteria	
002.7	Implement and monitor the organisation's procedure for maintaining occupational health and safety records	002.7.1	Occupational health and safety records for work area are accurately and legibly completed in accordance with workplace requirements for occupational health and safety records and legal requirements for the maintenance of records of occupational injury and disease
		002.7.2	Aggregate information from the area's occupational health and safety records is used to identify hazards and monitor risk control procedures within work area according to organisational procedures and within scope of responsibilities and competencies

Range Statement

Stream: Production Plant

Field: Core

Equivalencies: This unit is equivalent to the Worksafe Australia National Guidelines for integrating Occupational Health and Safety Competencies into National Industry Competency Standards [NOHSC: 7025(1994)]

This unit describes generic occupational health and safety competencies applicable for employees with supervisory responsibilities

To be exhibited in the work area of responsibility

In accordance with all relevant occupational health and safety legislation, particularly general duty of care; requirements for the maintenance and confidentiality of records of occupational injury and disease; provision of information and training; regulations and codes of practice relating to hazards present in work area; health and safety representatives and occupational health and safety committees; and issue resolution

Hazardous events include accidents, fires and emergencies such as chemical spills or bomb scare. Procedures for dealing with them include evacuation, chemical containment and first aid procedures

In accordance with workplace procedures for inspection; housekeeping; consultation processes, whether general or specific to occupational health and safety; training and assessment; specific hazard policies and procedures; occupational health and safety information; occupational health and safety record keeping; maintenance of plant and equipment; purchasing of supplies and equipment; and counselling/disciplinary processes

Evidence Guide

Critical aspects of evidence

Competence is demonstrated in the context of an established organisational occupational health and safety system with related policies, procedures and programs

Evidence of working knowledge, consistent with the elements of competencies, of all applicable occupational health and safety legislation and codes of practice is required

Evidence of understanding of hierarchy of control (the preferred order of risk control measures for most to least preferred, i.e. elimination, engineering controls, administrative controls and personal protective equipment) is required

Competence may be demonstrated working individually, or under the guidance of, or as a member of a team with specialist occupational health and safety staff or managers

Evidence of understanding of the significance of equal employment opportunity principles and practices for occupational health and safety staff or managers

Evidence of understanding of the significance of other management systems and procedures for occupational health and safety is required

Evidence of knowledge of literacy levels and communication skills of work group members and consequent suitable communication techniques is required

Competence may be assessed in conjunction with units of competency related to workplace training

Context of assessment

Competency Standards should be assessed on site or in a simulated work environment under the normal range of workplace conditions

Interdependent assessment of unit

Nil

Knowledge and Skills

A knowledge of:

Relevant occupational health and safety regulations; Relevant statutory legislation; Relevant enterprise/site safety procedures; Enterprise/site emergency procedures and techniques; Environmental legislation; Plant status

The ability to:

Apply relevant occupational health and safety regulations; Apply relevant statutory legislation; Apply relevant enterprise/site safety procedures; Apply enterprise/site emergency procedures and techniques; Apply enterprise recording procedures; Locate and/or identify relevant plant and equipment; Identify plant status; Communicate effectively.

UTP NEG003 A
Manage/Monitor Occupational Health and Safety – Level C

Descriptor: Establish and evaluate the organisation's occupational health and safety system in order to ensure that the workplace is, so far as is practicable, safe and without risks to the health of employees

Elements		Performance criteria	
003.1	Establish and maintain the framework for the occupational health and safety system in the area of responsibility	003.1.1	Occupational health and safety policies are developed which clearly express the organisation's commitment to occupational health and safety within the area of managerial responsibility and how relevant occupational health and safety legislation will be implemented, consistent with overall organisational policies
		003.1.2	Occupational health and safety responsibilities and duties which will allow implementation and integration of the occupational health and safety system are clearly defined, allocated and included in job descriptions and duty statements for all relevant positions
		003.1.3	Financial and human resources for the operation of the occupational health and safety system are identified, sought and/or provided in a timely and consistent manner
		003.1.4	Information on the occupational health and safety system and procedures for the area of responsibility is provided and explained in a form which is readily accessible to employees
		003.1.5	Where appropriate, the teams and individuals roles and responsibilities within the team are identified and, where required, assist in the provision of on-the-job training
003.2	Establish and maintain participative arrangements for the management of occupational health and safety	003.2.1	Appropriate consultative processes are established and maintained in consultation with employees and their representatives in accordance with relevant occupational health and safety legislation and consistent with the organisation's overall process for consultation

Elements		Performance criteria	
		003.2.2	Issues raised through participation and consultation are dealt with and resolved promptly and effectively in accordance with procedures for issue resolution
		003.2.3	Information about the outcomes of participation and consultation is provided in a manner accessible to employees
003.3	Establish and maintain procedures for identifying hazards	003.3.1	Existing and potential hazards within the area of managerial responsibility are correctly identified, and identification confirmed in accordance with occupational health and safety legislation, codes of practice and trends identified from the occupational health and safety records system
		003.3.2	A procedure for ongoing identification of hazards is developed and integrated within systems of work and procedures
		003.3.3	Activities are appropriately monitored to ensure that this procedure is adopted effectively throughout the area of managerial responsibility
		003.3.4	Hazard identification is addressed at the planning, design and evaluation stages of any change in the workplace to ensure that new hazards are not created
003.4	Establish and maintain procedures for assessing risks	003.4.1	Risks presented by identified hazards are correctly assessed in accordance with occupational health and safety legislation and codes of practice
		003.4.2	A procedure for ongoing assessment of risks is developed and integrated within systems of work and procedures
		003.4.3	Activities are monitored to ensure that this procedure is adopted effectively throughout the area of managerial responsibility
		003.4.4	Risk assessment is addressed at the planning, design and evaluation stages of any change within the area of managerial responsibility to ensure that the risk from hazards is not increased

Elements		Performance criteria	
003.5	Establish and maintain procedures for controlling risks	003.5.1	Measures to control assessed risks are developed and implemented in accordance with the hierarchy of control, relevant occupational health and safety legislation, codes of practice and trends identified from the occupational health and safety record system
		003.5.2	When measures which control a risk at its source are not immediately practicable, interim solutions are implemented until a permanent control measure is developed
		003.5.3	A procedure for ongoing control risks, based on the hierarchy of control, is developed and integrated within general systems of work and procedures
		003.5.4	Activities are monitored to ensure that the risk control procedure is adopted effectively throughout the area of managerial responsibility
		003.5.5	Risk control is addressed at the planning, design and evaluation stages of any change within the area of managerial responsibility to ensure that adequate risk control measures are included
		003.5.6	Inadequacies in existing risk control measures are identified in accordance with the hierarchy of control and resources enabling implementation of new measures are sought and/or provided according to appropriate procedures
003.6	Establish and maintain organisational procedures for dealing with hazardous events	003.6.1	Potential hazardous events are correctly identified
		003.6.2	Procedures which would control the risks associated with hazardous events and meet any legislative requirements as a minimum are developed in consultation with appropriate emergency services
		003.6.3	Appropriate information and training is provided to all employees to enable implementation of the correct procedures in all relevant circumstances

Elements		Performance criteria	
003.7	Establish and maintain an occupational health and safety training program	003.7.1	An occupational health and safety training program is developed and implemented to identify and fulfil employees' occupational health and safety training needs as part of the organisation's general training program
003.8	Establish and maintain a system for occupational health and safety records	003.8.1	A system for keeping occupational health and safety records is established and monitored to allow identification of patterns of occupational injury and disease within the area of managerial responsibility
003.9	Evaluate the organisation's occupational health and safety system and related policies, procedures and programs	003.9.1	The effectiveness of the occupational health and safety system and related policies, procedures and programs is assessed according to the organisation's aims with respect to occupational health and safety
		003.9.2	Improvements to the occupational health and safety system are developed and implemented to ensure more effective achievement of the organisation's aims with respect to occupational health and safety
		003.9.3	Compliance with occupational health and safety legislation and codes of practice is assessed to ensure that legal occupational health and safety standards are maintained as a minimum

Range Statement

Stream: Production Plant

Field: Core

Equivalencies: This unit is equivalent to the Worksafe Australia National Guidelines for integrating Occupational Health and Safety Competencies into National Industry Competency Standards [NOHSC: 7025(1994)]

This unit describes generic occupational health and safety competencies applicable for those with managerial responsibilities. This may be as an employee or as an owner of a business. It is expected that these competencies might be applicable in combination with other industry, occupation or workplace-specific competencies

To be exhibited within the area of managerial responsibility which might be an entire enterprise or department of an enterprise

Involves application of relevant occupational health and safety legislation and codes of practice, particularly: general duty of care; requirements for the maintenance of records of occupational injury and disease; provision of information and training; those dealing with occupational health and safety committees; health and safety representatives and issue resolution

Processes for consultation include occupational health and safety committees; consultation with health and safety representatives; issuing resolution procedures; and participative/consultative procedures conducted by supervisory staff within the area of managerial responsibility

Monitoring of activities may include review of written reports, performance appraisal or auditing procedures

Hazardous events include accidents, fires and emergencies such as chemical spills or bomb scares. Procedures for dealing with them include evacuation, chemical containment and first aid procedures

Relevant positions for implementing the occupational health and safety system will include managers, supervisors, occupational health and safety officer/manager and first aid officers

Evidence Guide

Critical aspects of evidence

Evidence of detailed knowledge of all relevant occupational health and safety legislation and codes of practice and how they will be implemented within the area of responsibility is required

Evidence of understanding of the hierarchy of control (the preferred order or risk control measures from most to least preferred, that is, elimination, engineering controls, administrative controls and lastly, personal protective equipment) is required

Competence may be demonstrated working individually, or under the guidance of, or as a member of a team with, specialist occupational health and safety staff, managers or consultants

Evidence of understanding of the significance of equal employment opportunity principles and practices for occupational health and safety is required

Evidence of understanding of the significance of other management systems and procedures for occupational health and safety is required

Evidence of knowledge of literacy levels and communication skills of employees in the area of managerial responsibility and consequent suitable communication techniques is required

Context of assessment

Competency Standards should be assessed on site or in a simulated work environment under the normal range of workplace conditions

Interdependent assessment of unit

Nil

Knowledge and Skills

A knowledge of:

Relevant occupational health and safety regulations; Relevant statutory legislation; Relevant enterprise/site safety procedures; Enterprise/site emergency procedures and techniques; Environmental legislation; Plant status

The ability to:

Apply relevant occupational health and safety regulations; Apply relevant statutory legislation; Apply relevant enterprise/site safety procedures; Apply enterprise/site emergency procedures and techniques; Apply enterprise recording procedures; Locate and/or identify relevant plant and equipment; Identify plant status; Communicate effectively.

UTP NEG004 A
Conduct Isolation Procedures for Permit to Work

Descriptor: This unit refers to the application of the permit to work procedures at the isolating level

Elements		Performance criteria	
004.1	Plan and prepare for isolation, de-isolation and restoration	004.1.1	Work requirements are identified from request/work orders or equivalent and clarified/confirmed with the appropriate parties or by site inspection
		004.1.2	Safety issues are identified to comply with statutory, enterprise and site requirements
		004.1.3	Materials, equipment and resources required to satisfy the job plan are identified, requisitioned, obtained and inspected for compliance with job specifications
		004.1.4	Work is planned in detail with the responsible issuing officer, including sequencing and prioritising of work, and the maintenance of plant security and capacity in accordance with permit/site requirements
		004.1.5	Job requirements including permits are co-ordinated with other personnel involved in, or affected by, the isolation in accordance with enterprise/site requirements
		004.1.6	Where appropriate the teams and individuals roles and responsibilities within the team are identified and, where required, assist in the provision of on-the-job training
004.2	Perform isolation	004.2.1	Plant to be isolated is correctly identified
		004.2.2	Isolation is performed in accordance with enterprise/site permit to work procedures
		004.2.3	Isolations are confirmed with others involved in, or affected by, the work in accordance with enterprise/site procedures
004.3	Perform de-isolation and restoration	004.3.1	De-isolation and restoration of plant is performed in accordance with permit to work procedures
		004.3.2	De-isolations are confirmed with others involved in, or affected by, the work in accordance with enterprise/site procedures
		004.3.3	Work completion details are finalised in accordance with enterprise/site procedures

Range Statement

Stream:	Production Plant
Field:	Operations
Equivalencies:	N/A

Other personnel involved may include issuing officer, isolating officers, recipient in charge and testing officer or their equivalent

Permits may include any documentation/forms approved for use by the enterprise safety rules and permit to work procedures

Work completion details may include log books, computer input

Resources may include approve

Evidence Guide

Critical aspects of evidence

The knowledge and application of relevant sections of: Occupational, health and safety legislation; Statutory legislation; Enterprise/site safety procedures; Enterprise/site emergency procedures

Applying isolation procedures

Context of assessment

Competency Standards should be assessed on site or in a simulated work environment under the normal range of workplace conditions

Assessment of this unit should also confirm that other competencies required to underpin this unit are satisfied

Assessment of this unit will be supported with documentary evidence, by means of endorsement stating type and application of equipment operated

Interdependent assessment of unit

Nil

Knowledge and Skills

A knowledge of:

Relevant occupational health and safety regulations; Relevant statutory legislation; Relevant enterprise/site safety procedures; Enterprise/site emergency procedures and techniques; Environmental legislation; Plant status; Relevant plant and equipment its location and operating parameters; Enterprise recording procedures; Isolating procedures; Communication principles and procedures; Computers and software; Introduction to power production plant; Typical arrangement of power production plant; Thermodynamics; Properties of matter; Power plant cycle; General responsibilities for power production plant operations; Electrical principles; Transformers; Switchgear; Electrical protection; Schematic diagrams; Auxiliary supply systems; High voltage systems; High voltage switching procedures; Safe operating principles

The ability to:

Apply relevant occupational health and safety regulations; Apply relevant statutory legislation; Apply relevant enterprise/site safety procedures; Apply enterprise/site emergency procedures and techniques; Apply enterprise recording procedures; Locate and/or identify relevant plant and equipment; Operate plant within design parameters; Identify plant status; Prepare plant/equipment for operation; Communicate effectively; Apply isolating procedures; Plan and prioritise work; Use drawings, diagrams and symbols; Apply data analysis techniques and tools.

UTP NEG005 A
Manage and Co-ordinate Permit to Work System

Descriptor: This unit refers to the management of the permit to work system, its implementation, development and application on a day to day basis and during major outages and projects

Elements		Performance criteria	
005.1	Implement permit to work procedures	005.1.1	Work requirements are identified from relevant personnel and documentation
		005.1.2	Permit to work is planned and prepared to achieve the defined work requirement in accordance with statutory, enterprise and site procedures
		005.1.3	Plant isolations are co-ordinated and confirmed with the appropriate personnel
		005.1.4	Issue, cancellation and recording of the permit to work is carried out in accordance with enterprise and site procedures
		005.1.5	Plant de-isolation and restoration is co-ordinated and confirmed with the appropriate personnel
		005.1.6	Documentation is completed in accordance with enterprise/site requirements
		005.1.7	Where appropriate, the teams and individuals roles and responsibilities within the team are identified and, where required, assist in the provision of on-the-job training
005.2	Co-ordinate outage permit to work requirements	005.2.1	Outage plan is obtained from, and confirmed with, the appropriate personnel
		005.2.2	Critical paths, major milestones and potential conflicts between permits are identified and assessed
		005.2.3	Permit to work plan is created and structured to achieve outage targets
		005.2.4	Permits are planned in accordance with statutory, enterprise/site procedures
		005.2.6	Resources are identified, obtained and utilised to ensure outage plan is maintained
		005.2.7	Issue and cancellation of permits is controlled and co-ordinated in accordance with work requirements

Elements		Performance criteria	
		005.2.8	De-isolation and restoration of plant is planned and co-ordinated to meet recommissioning targets
		005.2.9	Records are maintained during the outage in accordance with enterprise/site requirements
005.3	Develop permit to work system	005.3.1	Requirements for the development of new procedures, as required, are identified and confirmed
		005.3.2	Procedures are researched, created, assessed and confirmed with the appropriate personnel
		005.3.3	Procedures are documented and approved in accordance with enterprise procedures
005.4	Manage permit to work system	005.4.1	Permit to work system is audited, and results are evaluated in accordance with enterprise procedures
		005.4.2	Audit results are documented and reports/recommendations are confirmed with the appropriate personnel
		005.4.3	Permit to work system incidents are identified
		005.4.4	Incidents are investigated and assessed
		005.4.5	Results and recommendations relating to incident investigations are documented and confirmed with the appropriate personnel and in accordance with enterprise procedures

Range Statement

Stream: Production Plant

Field: Operations

Equivalencies: N/A

Appropriate personnel may include project engineers and leaders, maintenance personnel, operations personnel, internal and external specialist services personnel, line management, contractors and standing permit to work and/or safety committees

Documentation may include occupational health and safety and environmental legislation, industry standards, enterprise safety and/or permit to work rules, enterprise and site procedures, enterprise permit to work documentation/form(s), operation and maintenance manuals, plant drawings and schematics and computer based software packages

Resources may include approved documentation/form(s), manpower, isolation equipment (locking devices, signs etc) and personal or mainframe computers

Permit to work may include any approved documentation/form(s) controlled by the safety rules or permit to work procedures of the candidates enterprise

Auditing may include quantity, quality and suitability of permits and isolation procedures

Incidents may refer to permit to work system breaches

Evidence Guide

Critical aspects of evidence

The knowledge and application of relevant sections of: Occupational, health and safety legislation; Statutory legislation; Enterprise/site safety procedures; Enterprise/site emergency procedures

Implementing permit to work system

Coordinating permit to work system

Managing permit to work system

Context of assessment

Competency Standards should be assessed on site or in a simulated work environment under the normal range of workplace conditions

Assessment of this unit should also confirm that other competencies required to underpin this unit are satisfied

Assessment of this unit will be supported with documentary evidence, by means of endorsement stating type and application of equipment operated

Interdependent assessment of unit

Nil

Knowledge and Skills

A knowledge of:

Relevant occupational health and safety regulations; Relevant statutory legislation; Relevant enterprise/site safety procedures; Enterprise/site emergency procedures and techniques; Plant status; Relevant plant and equipment, its location and operating parameters; Environmental legislation; Enterprise recording procedures; Computers and software; Auditing procedures and techniques; Investigation and evaluating techniques; Development and management techniques; Communication principles; Human resources and management principles; Introduction to power production plant; Typical arrangements of power production plant; Thermodynamics; Properties of matter; Power plant cycle; General responsibilities for power production plant operations; Control of a boiler; Basic turbine construction and operating

principles; Turbine operations; Electrical principles; Transformers; AC generators; Alternators, excitors and hydrogen systems; Switchgear; Electrical protection; Schematic diagrams; Auxiliary supply systems; High voltage systems; High voltage switching procedures; Safe operating principles

The ability to:

Apply relevant occupational health and safety regulations; Apply relevant statutory legislation; Apply relevant enterprise/site safety procedures; Apply enterprise/site emergency procedures and techniques; Locate relevant plant and equipment; Identify plant status; Plan and prioritise work; Apply planning principles and techniques; Communicate effectively; Apply data analysis techniques and tools; Develop and manage permit to work systems; Access and use diagrams, drawings and symbols; Manage human resources.

UTP NEG006 A
Solve Operational Problems

Descriptor: This unit covers the solving of operational problems within a team environment

Elements		Performance criteria	
006.1	Plan and prepare	006.1.1	Operational problems are identified, located and defined
		006.1.2	Extent, cause and effect of the problem is determined by analysis using the appropriate techniques in accordance with work requirements
		006.1.3	Prioritisation, including required response times, is determined in relation to existing work requirements
		006.1.4	Alternatives for problem solution are canvassed and assessed to determine the most practical, cost efficient and safe option
		006.1.5	Remedial plan is developed and conveyed to others involved in, or affected by, the work
		006.1.6	Resources required to implement the plan are identified and obtained in accordance with enterprise/site procedures
		006.1.7	Where appropriate, the teams and individuals roles and responsibilities within the team are identified and, where required, assist in the provision of on-the-job training
006.2	Implement the plan	006.2.1	The plan is initiated in accordance with enterprise/site procedures
		006.2.2	Implementation is monitored to ensure the plan is effective and the desired outcomes are achieved
006.3	Complete documentation	006.3.1	Documentation is updated and plant problems, movements, abnormalities and status are reported and logged in accordance with enterprise/site procedures

Range Statement

Stream: Production Plant

Field: Operations

Equivalencies: N/A

Team environment refers to working, coordinating and resolving matters as a team, shift, gang, crew or other industrially and historically accepted terms

Operational problems may refer to problems that impact on the safe, efficient and reliable operation of the plant

Safety standards may include relevant sections of occupational health and safety legislation, enterprise safety rules, national standards for plant and relevant state and federal legislation

Information and documentation sources may include verbal or written communications; enterprise safety rules documentation/form(s); equipment and alarm manuals; dedicated computer equipment; standing enterprise/site and operating instructions; enterprise log books; and manufacturer's operation and maintenance manuals

Technical and operational indicators may include stimuli (audio, smell, touch, visual), local indicators and recorders, computers and alarms (visible and/or audible)

Communications may be by means of telephone, two way radio, pager, public address system, computer (electronic mail) and operating log (written or verbal)

Appropriate personnel to consult, give or receive direction may include supervisor/team leader or equivalent; other coordinators of energy production; other operating staff; technical and engineering officers or equivalent; maintenance personnel; and contractor staff

Test, fault finding and operating tools may include high voltage testers, proving dead equipment, power or hand tools and control system equipment

Operating environment may be during night periods; during inclement or otherwise harsh weather conditions; and in wet/noisy/dusty/hot areas

Evidence Guide

Critical aspects of evidence

The knowledge and application of relevant sections of: Occupational, health and safety legislation; Statutory legislation; Enterprise/site safety procedures; Enterprise/site emergency procedures

The knowledge of plant location and operating parameters

The ability to apply problem solving techniques

The ability to prioritise and plan activities

The ability to communicate effectively

Context of assessment

Competency Standards should be assessed on site or in a simulated work environment under the normal range of workplace conditions

Assessment of this unit will be supported with documentary evidence, by means of endorsement stating type and application of equipment operated

Interdependent assessment of unit

Nil

Knowledge and Skills

A knowledge of:

Relevant occupational health and safety regulations; Relevant statutory legislation; Relevant enterprise/site safety procedures; Enterprise/site emergency procedures and techniques; Environmental legislation; Plant status; Relevant plant and equipment, its location and operating parameters; Enterprise recording procedures; Planning techniques and principles; Problem solving techniques and principles; Communication principles; Human resources and management principles; Control and data acquisition systems

The ability to:

Apply relevant occupational health and safety regulations; Apply relevant statutory legislation; Apply relevant enterprise/site safety procedures; Apply enterprise/site emergency procedures and techniques; Apply enterprise recording procedures; Locate relevant plant and equipment; Identify plant status; Apply data analysis techniques and tools; Communicate effectively ; Prioritise problem solving solutions and activities; Apply planning techniques and principles; Access and use diagrams, drawings and symbols; Work in a team.

UTP NEG007 A
Conduct Emergency Response Within a Workplace Team

Descriptor: This unit refers to emergency team operations

Elements		Performance criteria	
007.1	Identify emergency team roles and responsibilities	007.1.1	The purpose of the team is identified and, where necessary, clarified with relevant personnel
		007.1.2	The duties and responsibilities of team members are identified
		007.1.3	Instructions from supervising team members are carried out in accordance with enterprise/site procedures
		007.1.4	Team members are supported in relation to duties and responsibilities
		007.1.5	Appropriate team member identification is displayed in accordance with procedures
007.2	Cooperate with other emergency service(s) personnel	007.2.1	The roles and responsibilities of emergency service(s) personnel are clarified, where necessary
		007.2.2	Role and authority of emergency services is conveyed to other team members
		007.2.3	Instructions from relevant emergency services personnel are clarified and complied with
007.3	Evaluate the emergency	007.3.1	The emergency situation is identified and classified and appropriate action determined
		007.3.2	Advice is accessed from relevant personnel in evaluating the emergency
		007.3.3	Notification of emergency is undertaken in accordance with authorised procedures
		007.3.4	Emergency evacuation procedures are followed where appropriate
		007.3.5	Requirement for special expert assistance is identified
		007.3.6	Incident is evaluated to prevent repetition of risk
		007.3.7	Location of emergency is identified and most effective route to emergency is determined

Elements		Performance criteria	
		007.3.8	Situations where first attack actions are not safe are reported according to enterprise/site procedures
007.4	Contain emergencies	007.4.1	Emergencies are contained to their area of origin were possible, in accordance with procedures
		007.4.2	Emergency control equipment or facilities used to confine emergency are used in a safe manner, and with regard to other team members and personnel
		007.4.3	Emergency control equipment or facilities are used within limitations and relevant operating procedures
		007.4.4	Manufacturer's specifications, environmental requirements and enterprise procedures are identified, applied and monitored throughout the work procedures
		007.4.5	The anticipated behaviour and characteristics of the fire or emergency incident are taken into account in the directions and advice given to team members after appropriate site inspection
		007.4.6	A plan to ensure personnel safety and plant integrity is developed, in accordance with statutory, industry and site standards
		007.4.7	Relevant documentation is obtained in accordance with procedures
		007.4.8	Materials, equipment and resources required to satisfy the job are identified and obtained
		007.4.9	Effective lines of communication are established if required
007.5	Use emergency equipment	007.5.1	Appropriate equipment is selected to attack emergency situation
		007.5.2	Equipment is checked in accordance with procedures or standards to ensure it is safe and ready for use
		007.5.3	Equipment is used in accordance with relevant procedures and standards

Elements		Performance criteria	
		007.5.4	Operation and location of others in the team are monitored to ensure the continuing communication, visual contact and safety in accordance with enterprise/site procedures
		007.5.5	Use of equipment is co-ordinated in conjunction with other emergency actions/responses
		007.5.6	Rescue and first aid procedures are applied as required and in accordance with procedures
007.6	Report outcomes of emergency response	007.6.1	Fire and emergency equipment is marked or positioned after use, in accordance with procedures, to indicate it requires servicing or replacing
		007.6.2	The use of emergency equipment is reported according to procedures
		007.6.3	De-briefing is attended and responded to in accordance with procedures
		007.6.4	Effectiveness of emergency response is evaluated and recommendations are submitted for consideration

Range Statement

Stream: Production Plant

Field: Operations

Equivalencies: N/A

Incidents may include fire, rescue, hazardous substances, explosions, bomb alerts, terrorists, radiation, natural disasters, environmental, electrical storms/incidents, accidents, electrical equipment, structural, security related or wildlife related incidents

Special assistance may be on site personnel (e.g. chemists, fire team), rescue team, environmental officer, safety officer, radiation officer, floor warden or equivalent, chief warden or equivalent and security staff

External emergency groups may include police, fire fighting agencies, ambulance, state emergency service and supply authorities (such as water utility)

Communications may be by means of verbal, telephone system, two-way radio, pager, emergency public address system, radio, facsimile, computer (electronic mail) or enterprise/site log book

Additional resources may include personnel, fire fighting equipment, fire fighting protective clothing, vehicles for transport of materials or personnel, communication equipment and ladders

Site hazards may include power lines, trees, overhead service lines, abnormal weather conditions, dangerous materials/chemicals, earthworks/obstructions, underground services, hazardous substances and electrical, thermal, gas, explosive or structural hazards

Information and documentation sources may include verbal and written communications; enterprise/site operating instructions; manufacturer's operating and maintenance manuals; dedicated computer equipment; enterprise/site log books; critiques - meetings, discussion, demonstrations and explanations; feedback - comments on suitability of procedures and effectiveness of control equipment; materials safety data sheets; drawings; and maps

Personnel refers to all personnel and may include supervisory, maintenance, operational, contractors and administrative personnel, visitors and shift operatives

Operating environment may be during inclement or otherwise harsh weather conditions, in wet/noisy/dusty/hot areas or during night periods

Identification may include helmets, armbands, vests and other apparel

Technical and operational indicators may include stimuli (audio, smell, touch, visual), computers and alarms (visible and or audible)

Safety standards may include relevant sections of occupational health and safety legislation, enterprise safety rules and national standards for plant

Limitations may refer to equipment and competencies of team members

Evidence Guide

Critical aspects of evidence

The knowledge and application of relevant sections of: Occupational, health and safety legislation; Statutory legislation; Enterprise/site safety procedures; Enterprise/site emergency procedures

The ability to communicate effectively with the appropriate personnel and agencies during an emergency

The knowledge and ability to apply first aid and resuscitation techniques

The knowledge of potential hazards during initial response

The knowledge and application of firefighting and rescue principles and techniques

The ability to respond to an emergency situation

The ability to use emergency equipment

Context of assessment

Competency Standards should be assessed on site or in a simulated work environment under the normal range of workplace conditions

Assessment of this unit will be supported with documentary evidence, by means of endorsement stating type and application of equipment operated

Interdependent assessment of unit

Nil

Knowledge and Skills

A knowledge of:

Relevant occupational health and safety regulations; Relevant statutory legislation; Relevant enterprise/site safety procedures; Enterprise/site emergency procedures and techniques; Plant status; Relevant plant and equipment, its location and operating parameters; Site communications systems; First aid; Appropriate warning signs; Equipment appropriate for the task; Operation of emergency stations; Roles of the emergency team and its members; Classifications of fires and emergencies; Roles and responsibilities of emergency services; Firefighting and rescue principles and techniques; Communication principles; Human resources and management principles within a team; Material safety data sheets and emergency services

The ability to:

Apply relevant occupational health and safety regulations; Apply relevant statutory legislation; Apply relevant enterprise/site safety procedures; Apply enterprise/site emergency procedures and techniques; Locate relevant plant and equipment; Prepare emergency plant/equipment for operation; Communicate effectively; Plan and prioritise work; Work in a team; Apply first aid and resuscitation techniques; Apply emergency and evacuation procedures; Identify and operate appropriate emergency communications equipment; Apply emergency techniques and procedures.

UTP NEG008 A
Co-ordinate Emergency Team Operation

Descriptor: This unit refers to the co-ordination and management of an emergency team

Elements		Performance criteria	
008.1	Co-ordinate the workplace emergency team	008.1.1	The purpose of the team is identified and, where necessary, clarified with relevant people
		008.1.2	The duties and responsibilities of team members are identified
		008.1.3	Instructions from supervising team members are carried out in accordance with enterprise/site procedures
		008.1.4	Team members are supported in relation to duties and responsibilities
		008.1.5	Appropriate team member identification is displayed in accordance with procedures
008.2	Cooperate with other emergency service(s) personnel	008.2.1	The roles and responsibilities of emergency service(s) personnel are clarified, where necessary
		008.2.2	Role and authority of emergency services is conveyed to other team members
		008.2.3	Instructions from relevant emergency services personnel are clarified and complied with
		008.2.4	Guidance and assistance for emergency services is provided in accordance with enterprise/site procedures
		008.2.5	Directions and advice are given to emergency service personnel and team members after appropriate site inspection
		008.2.6	A plan to ensure personnel safety and plant integrity is developed in accordance with statutory, industry and site standards
		008.2.7	Relevant documentation is obtained in accordance with procedures
		008.2.8	Materials, equipment and resources required to satisfy the job are identified and obtained
008.3	Evaluate the emergency	008.3.1	Nature, extent and cause of the emergency is identified in accordance with procedures
		008.3.2	Potential risk to personnel, equipment, environment and production is identified

Elements		Performance criteria	
		008.3.3	Notification of emergency is undertaken in accordance with authorised procedures
		008.3.4	Emergency evacuation procedures are followed where appropriate
		008.3.5	Requirement for special expert assistance is identified
		008.3.6	Incident is evaluated to prevent repetition of risk
		008.3.7	Location of emergency is identified and most effective route to emergency is determined
008.4	Respond to emergency	008.4.1	Vehicles and buildings are secured and protected in accordance with site procedures
		008.4.2	Potential sources of danger are isolated and warning signs/signals and barriers are put in place in accordance with site/enterprise procedures
		008.4.3	Emergency responses are applied in accordance with site and/or enterprise safety procedures
		008.4.4	Materials, equipment and resources required to satisfy the job are identified and obtained
		008.4.5	Effective lines of communication are established if required
		008.4.6	The use of personal protective clothing, equipment and/or procedures is monitored in accordance with procedures
		008.4.7	Technical advice to emergency service personnel is given in accordance with procedures
008.5	Report outcomes of emergency response	008.5.1	Fire and emergency equipment is marked or positioned after use, in accordance with procedures, to indicate it requires servicing or replacing
		008.5.2	The use of emergency equipment is reported according to procedures
		008.5.3	De-briefing is attended and responded to in accordance with procedures

Elements	Performance criteria
	008.5.4 Effectiveness of emergency response is evaluated and recommendations are submitted for consideration

Range Statement

Stream: Production Plant

Field: Operations

Equivalencies: N/A

Incidents may include fire, rescue, hazardous substances, explosions, bomb alerts, terrorists, radiation, natural disasters, environmental, electrical storms/incidents, accidents, electrical equipment, structural, security related or wildlife related incidents

Special assistance may be on site personnel (e.g. chemists, fire team), rescue team, environmental officer, safety officer, radiation officer floor warden or equivalent, chief warden or equivalent and security staff

External emergency groups may include police, fire brigade, ambulance, state emergency service supply authorities (such as water utility)

Communications may be by means of verbal, telephone system, two-way radio, pager, emergency public address system, radio, facsimile, computer (electronic mail), enterprise/site log book, whistle or hand signal

Additional resources may include personnel, fire fighting equipment, fire fighting protective clothing, chemical protective clothing, air cylinders for breathing apparatus, rescue equipment, fire retardant compounds, oil containment materials/equipment, vehicles for transport of materials or personnel, stand-by air compressors, storm water pumps, gas monitoring equipment, communication equipment, ladders, spill kits, salvage gear and forcible entry tools

Site hazards may include power lines, trees, overhead service lines, abnormal weather conditions, dangerous materials/chemicals, earthworks/obstructions, underground services, hazardous substances and electrical, thermal, explosive and structural hazards

Technical advice may include plant layout, plant location, isolation points, location and quantity of hazardous substances and location of fire hydrants, pumps and water supplies

Information and documentation sources may include verbal and written communications, enterprise/site operating instructions, equipment manufacturer's recommendations, dedicated computer equipment and enterprise/site log books

Personnel refers to all people on site at the time of the emergency and may include supervisory, maintenance and operational staff, contractors, trainees and visitors

Operating environment may be during inclement or otherwise harsh weather conditions, in wet/noisy/dusty/hot areas or during night periods,

Technical and operational indicators may include stimuli (audio, smell, touch, visual), computers and alarms (visible and or audible)

Safety standards may include relevant sections of occupational health and safety legislation, enterprise safety rules, national standards for plant and relevant state and federal legislation

Identification may include helmets, armbands, vests and other apparel

Evidence Guide

Critical aspects of evidence

The knowledge and application of relevant sections of: Occupational, health and safety legislation; Statutory legislation; Enterprise/site safety procedures; Enterprise/site emergency procedures

The ability to apply leadership skills

The ability to communicate effectively with the appropriate personnel and agencies during an emergency

The knowledge of potential hazards during response

The knowledge and application of firefighting and rescue principles and techniques

The ability to respond to an emergency situation

Context of assessment

Competency Standards should be assessed on site or in a simulated work environment under the normal range of workplace conditions

Assessment of this unit should also confirm that other competencies required to underpin this unit are satisfied

Assessment of this unit will be supported with documentary evidence, by means of endorsement stating type and application of equipment operated

Interdependent assessment of unit

Nil

Knowledge and Skills

A knowledge of:

Relevant occupational health and safety regulations; Relevant statutory legislation; Relevant enterprise/site safety procedures; Enterprise/site emergency procedures and techniques; Plant status; Relevant plant and equipment, its location and operating parameters; Site communications systems; First aid; Appropriate warning signs; Equipment appropriate for the task; Operation of emergency stations; Roles of the emergency team and its members; Classifications of fires and emergencies; Roles and responsibilities of emergency services; Firefighting and rescue principles and techniques; Communication principles ; Human resources and management principles within a team; Material safety data sheets and emergency services

The ability to:

Apply relevant occupational health and safety regulations; Apply relevant statutory legislation; Apply relevant enterprise/site safety procedures; Apply enterprise/site emergency procedures and techniques; Locate relevant plant and equipment; Prepare emergency plant/equipment for operation; Communicate effectively; Plan and prioritise work; Work in a team; Apply first aid and resuscitation techniques; Apply emergency and evacuation procedures; Identify and operate appropriate emergency communications equipment; Apply emergency techniques and procedures.

UTP NEG009 A
Develop Implement and Monitor Environmental Management Systems

Descriptor: This unit refers to the identification of environmental requirements, the implementation of a management strategy, and the monitoring and reviewing of its effectiveness

Elements		Performance criteria	
009.1	Produce environmental management strategies	009.1.1	A clear and concise statement of objectives is prepared to ensure the needs of the strategy can be met
		009.1.2	Existing environmental management strategies are reviewed and assessed for compliance with relevant legislation, industry standards and community expectations
		009.1.3	Potential activities/operations that may impact on the environment are identified and investigated to ensure that minimisation strategies can be developed
		009.1.4	Management strategies are developed, selected and prioritised for implementation in order to provide the most effective resolution of issues/problems
		009.1.5	Achievable timelines, schedules and targets are established which enable strategy objectives to be met
		009.1.6	Financial resources, personnel, and physical facilities and equipment are determined and procured to achieve the strategy outcomes
009.2	Implement/ promote environmental management strategies	009.2.1	Environmental strategies/requirements are documented in a manner which facilitates implementation
		009.2.2	Environmental strategies/requirements are implemented in accordance with relevant legislation, industry standards and community expectations
		009.2.3	Others involved in, or affected by, the implementation are consulted in order to facilitate acceptance of the strategy implementation process

Elements		Performance criteria	
		009.2.4	Environmental strategy/requirements are promoted with the knowledge and cooperation of others involved in, or affected by, the implementation
009.3	Monitor and review environmental management strategies	009.3.1	Regular data is collected and analysed to provide accurate measures of performance
		009.3.2	Statistically valid comparisons are made between objectives and performance to establish if objectives have been met
		009.3.3	Feedback from other personnel is evaluated and assessed in order to determine if changes to strategies are required
		009.3.4	Changes to implemented strategy are made as required to ensure outcomes are achieved
		009.3.5	Information is monitored, recorded and used to develop and recommend new strategies

Range Statement

Stream: Production Plant

Field: Core

Equivalencies: This unit of competence is based on units EC77002/3/4/9 of the Local Government Competency Standards

Resources may include national, state, local or enterprise; environmental legislation, regulations, rules, codes of practice or procedures, case studies and technical reports

Potential activities/operations may include pollution threats to air and water, noise levels, hazardous sites and chemicals

Existing strategies may refer to national, industry or enterprise strategies or external recommendations

Personnel may refer to on-site staff, consultants, statutory/government agencies, community and technical experts

Implementation may affect on site personnel including contract personnel and the community

Evidence Guide

Critical aspects of evidence

The knowledge and application of relevant sections of: Occupational, health and safety legislation; Statutory legislation; Enterprise/site safety procedures; Enterprise/site emergency procedures

Producing environmental management strategies

Implementing environmental management strategies

Monitoring and reviewing environmental strategies

Context of assessment

Competency Standards should be assessed in the workplace or simulated workplace and under the normal range of workplace conditions

Assessment of this unit will be supported with documentary evidence, by means of endorsement stating type and application of work

Interdependent assessment of unit

Nil

Knowledge and Skills

A knowledge of:

Occupational health and safety standards; Relevant statutory requirements (acts, legislation, regulations) and codes of practice; Environmental awareness and impact; Environmental planning/management; Sources of pollution; Pollution minimisation; Resource usage; Engineering practices; Communication principles; Strategic planning; Risk management; Stakeholder interests, concerns and sensitivities; Enterprise strategies and procedures; Responding to environmental issues

The ability to:

Apply occupational health and safety standards; Apply relevant statutory requirements and codes of practice; Recognise potential environmental issues; Carry out environmental planning/strategy development; Carry out risk management; Research environmental reports; Develop environmental strategies; Identify sources of pollution; Apply pollution minimisation procedures; Manage resources; Monitor environmental procedures/requirements; Recommend strategy change; Communicate effectively; Apply data analysis techniques and tools.

UTP NEG015 A
Clean Plant and Equipment

Descriptor: This unit refers to the cleaning of industrial plant, machinery and surrounds associated with generating stations and related surroundings, and may include the appropriate removal of excess or oil based soil

Elements		Performance criteria	
015.1	Plan and prepare for the work	015.1.1	Work requirements are identified from request/work orders or equivalent and clarified/confirmed with appropriate parties or by site inspection
		015.1.2	Occupational Health and Safety standards, statutory requirements, relevant Australian Standards, Codes of Practice, manufacturers' specifications, environmental requirements and enterprise procedures are identified, applied and monitored throughout the work procedure
		015.1.3	Resources required to satisfy the work plan are identified, obtained and inspected for compliance with the job specifications
		015.1.4	Resources required to satisfy the work plan are identified, obtained and inspected for compliance with the job specifications
		015.1.5	Correct size, type and quantity of materials/components are determined, obtained and inspected for compliance with the job specifications
		015.1.6	Work is planned in detail including sequencing and prioritising and considerations made where appropriate for the maintenance of plant security and capacity in accordance with system/site requirements
		015.1.7	Co-ordination requirements, including requests for isolations where appropriate, are resolved with others involved, affected or required by the work
		015.1.8	Potential hazards are identified and prevention and/or control measures are selected in accordance with the work plan and site procedures
		015.1.9	Work area is prepared in accordance with work requirements and site procedures

Elements		Performance criteria	
		015.1.10	Where appropriate, the teams and individuals roles and responsibilities within the team are identified and, where required, assist in the provision of on-the-job training
015.2	Clean plant and equipment	015.2.1	Required isolations are confirmed, where appropriate, in accordance with site requirements
		015.2.2	Surfaces are pre-applied, where required, with suitable agent to assist in release of soil in accordance with manufacturer's instructions
		015.2.3	Cleaning equipment and accessories are operated in accordance with manufacturer's instructions and work requirements
		015.2.4	Plant and equipment is cleaned with due regard being paid to nearby plant security and capacity in accordance with the work plan
		015.2.5	Plant and equipment is cleaned in conjunction with others involved in, or affected by, the work in accordance with the work plan
		015.2.6	Residual waste is directed to suitable disposal points in accordance with relevant environmental procedures or legislation
		015.2.7	Final job inspection is carried out in accordance with the work plan
015.3	Complete the work	015.3.1	Work is completed and appropriate personnel notified in accordance with site/enterprise requirements
		015.3.2	Work area is cleared of waste, cleaned, restored and secured in accordance with site/enterprise procedures
		015.3.3	Plant, tools and equipment are maintained and stored in accordance with site/enterprise procedures
		015.3.4	Work completion details are finalised in accordance with site/enterprise procedures

Range Statement

Stream: Production Plant

Field: Operations

Equivalencies: This unit of competence is based on units 21 and 22 of the National Competency Standards for Contract Cleaning (machinery and equipment stream)

Inspection should be planned with the appropriate parties to determine access, conditions and work requirements

Environmental requirements may refer to the provision of an area to be used for collection and disposal of soil residue or suitable drainage of residues

Resources may include ladders, scaffolding, work platforms, personal protective equipment, barricades and signs

Materials may include cleaning agents, strippers, polishes, degreasers, disinfectant and appropriate chemicals/solvents

Cleaning equipment may include hoses, lances, steam cleaners, brooms, buckets, shovels and motor driven vacuum cleaners

Machinery cleaning methods may include hosing down, wash and wipe, air clean, brush down and scrub and wipe

Potential hazards may include rotating plant, electrical equipment, slippery surfaces, airborne particulates, confined spaces, fumes and substances

Safety standards may include relevant sections of occupational health and safety legislation, enterprise safety rules, relevant state and federal legislation, national standards for plant and Australian standards

Information and documentation sources may include verbal or written communications, enterprise safety rules documentation, enterprise operating instructions, manufacturer's operational and maintenance manuals, equipment and alarm manuals, dedicated computer equipment, standing enterprise instructions, work plans, plant notes and enterprise log books

Evidence Guide

Critical aspects of evidence

The knowledge and application of relevant sections of: Occupational, health and safety legislation; Statutory legislation; Enterprise/site safety procedures; Enterprise/site emergency procedures

Applying cleaning techniques and procedures

Identifying and operating appropriate cleaning equipment

Identifying and selecting appropriate cleaning methods

Context of assessment

Competency Standards should be assessed in the workplace or simulated workplace and under the normal range of workplace conditions

Assessment of this unit will be supported with documentary evidence, by means of endorsement stating type and application of work

Interdependent assessment of unit

Nil

Knowledge and Skills

A knowledge of:

Occupational health and safety standards; Relevant environmental requirements; Plant and equipment; Cleaning agents, lubricants and their properties; Cleaning equipment and their accessories; Hazardous materials; Cleaning techniques and procedures; Hand and portable power tools; Communication principles

The ability to:

Apply occupational health and safety standards; Apply relevant environmental requirements; Identify and select appropriate cleaning methods; Identify and operate appropriate cleaning equipment; Handle hazardous materials; Use material safety data sheets; Apply cleaning techniques and procedures; Use hand and portable power tools; Communicate effectively.

UTP NEG016 A
Perform Basic Rigging Work

Descriptor: This unit refers to the rigging work associated with, but not limited to, movement of plant and equipment, particular hoists, safety nets and static lines, safety screens and shutters

Elements		Performance criteria	
016.1	Plan and prepare for the work	016.1.1	Work requirements are identified from request/work orders or equivalent and clarified/confirmed with appropriate parties or by site inspection
		016.1.2	Occupational health and safety standards, statutory requirements, relevant Australian standards, codes of practice, manufacturers' specifications, environmental requirements and enterprise procedures are identified, applied and monitored throughout the work procedure
		016.1.3	Resources required to satisfy the work plan are identified, obtained and inspected for compliance with the job specifications
		016.1.4	Relevant plans, drawings and text are selected and interpreted in accordance with the work plan.
		016.1.5	Correct size, type and quantity of materials/components are determined, obtained and inspected for compliance with the job specifications
		016.1.6	Work is planned in detail including sequencing & prioritising and considerations made where appropriate for the maintenance of plant security and capacity in accordance with system/site requirements
		016.1.7	Co-ordination requirements, including requests for isolations where appropriate, are resolved with others involved, affected or required by the work
		016.1.8	Potential hazards are identified and prevention and/or control measures are selected in accordance with the work plan and site procedures
		016.1.9	Work area is prepared in accordance with work requirements and site procedures.

Elements		Performance criteria	
		016.1.10	Where appropriate, the teams and individuals roles and responsibilities within the team are identified and, where required, assist in the provision of on-the-job training
016.2	Perform basic rigging operations	016.2.1	Load weight calculated/determined and confirmed in accordance with the work plan
		016.2.2	Appropriate lifting or pulling devices for the movement of load are assembled or erected in accordance with the work plan
		016.2.3	Loads are connected to movement device using appropriate techniques and load connection equipment in accordance with the work plan
		016.2.4	Loads are lifted/moved in accordance with appropriate methods, techniques, planned hazard prevention and control measures, and manufacturer's recommendations/ specifications
		016.2.5	Communications and signal methods appropriate to the work are selected and used in accordance with relevant Australian standards
		016.2.6	Load is directed to required position using appropriate signals in accordance with Australian standards
		016.2.7	Load is lowered to required position and fixed/anchored in position using appropriate methods in accordance with manufacturer's specifications and the work plan
		016.2.8	Load shifting equipment is dismantled, removed and inspected for wear in accordance with accepted codes of practice and the work plan

Elements		Performance criteria	
016.3	Complete the work	016.3.1	Work is completed and appropriate personnel notified in accordance with site/enterprise requirements
		016.3.2	Work area is cleared of waste, cleaned, restored and secured in accordance with site/enterprise procedures
		016.3.3	Plant, tools and equipment are maintained and stored in accordance with site/enterprise procedures
		016.3.4	Work completion details are finalised in accordance with site/enterprise procedures

Range Statement

Stream: Production Plant

Field: Maintenance

Equivalencies: This unit of competence is based on units 1 and 2 class: basic rigging of the Worksafe Australia (NOHSC:1006 [1992]) National Competency Standards

Potential hazards may include overhead services such as steam, gas, water, telephone and power cables, uneven or unstable ground, trees, underground services, buildings and structures, other personnel and environmental influences such as lighting, noise, temperature and wind

Tools and equipment may include spanners, hammers, pinch bars, clamps, pulleys, chain blocks, pull lifts, winches, jacks, skids, rollers, cradle timbers, chocks and wedges, packers, fish plates and bolts, feeler gauges, turfers and turn buckles

Lifting equipment may include chains, spreader beams, ropes, wire ropes, shackles and eye bolts

Appropriate signals and communication methods may include verbal, hand signals, whistles, hooters, two way radio and lights (all to the relevant Australian standard)

Resources may include cranes, hoists, drawings/plans and personnel

Fixing and anchoring methods may include bolting, wedging, riveting and tying

Basic rigging work may include movement of plant and equipment, steel erection, particular hoists, placement of pre-cast concrete, safety nets and static lines, mast climbers, perimeter safety screens and shutters and cantilevered crane loading platforms

Work completion details may include plant and maintenance records, job cards, check sheets, updates and reporting and/or documenting equipment defects

Evidence Guide

Critical aspects of evidence

The knowledge and application of relevant sections of: Occupational, health and safety legislation; Statutory legislation; Enterprise/site safety procedures; Enterprise/site emergency procedures

Applying basic rigging techniques

Selecting and assembling lifting gear

Applying anchoring techniques

Slinging and directing loads

Calculating load weights

Context of assessment

Competency Standards should be assessed in the workplace or simulated workplace and under the normal range of workplace conditions

Assessment of this unit will be supported with documentary evidence, by means of endorsement stating type and application of work

Interdependent assessment of unit

Nil

Knowledge and Skills

A knowledge of:

Occupational health and safety standards; Relevant standards, legislative requirements and codes of practice; Various types of slings and chains and their safe working load; Slinging techniques; Lifting gear/equipment; Hazard identification and control techniques; Load calculation techniques; Steel fixing techniques; Various cranes and hoists and their limitations; Various bolts and their tightening procedures; Safety equipment; Signalling methods; Communication principles

The ability to:

Apply occupational health and safety standards; Apply relevant standards, legislative requirements and codes of practice; Interpret and apply plans and procedures; Select and assemble lifting gear; Sling and direct loads; Calculate load weights; Identify and apply hazard control measures; Use hand tools; Bolt and fix steel work; Work at heights; Interpret and apply appropriate signalling techniques; Apply anchoring techniques; Apply basic rigging techniques; Carry out work completion details; Communicate effectively.

UTP NEG017 A
Perform Intermediate Rigging Work

Descriptor: This unit refers to the rigging work associated with, but not limited to, movement of plant and equipment, all hoists, rigging of cranes, dual lifts, demolition

Elements		Performance criteria	
017.1	Plan and prepare for the work	017.1.1	Work requirements are identified from request/work orders or equivalent and clarified/confirmed with appropriate parties or by site inspection
		017.1.2	Occupational health and safety standards, statutory requirements, relevant Australian standards, codes of practice, manufacturers' specifications, environmental requirements and enterprise procedures are identified, applied and monitored throughout the work procedure
		017.1.3	Resources required to satisfy the work plan are identified, obtained and inspected for compliance with the job specifications
		017.1.4	Relevant plans, drawings and texts are selected and interpreted in accordance with the work plan
		017.1.5	Correct size, type and quantity of materials/components are determined, obtained and inspected for compliance with the job specifications
		017.1.6	Work is planned in detail including sequencing and prioritising and considerations made where appropriate for the maintenance of plant security and capacity in accordance with system/site requirements.
		017.1.7	Co-ordination requirements, including requests for isolations where appropriate, are resolved with others involved, affected or required by the work
		017.1.8	Potential hazards are identified and prevention and/or control measures are selected in accordance with the work plan and site procedures
		017.1.9	Work area is prepared in accordance with work requirements and site procedures

Elements		Performance criteria	
017.2	Perform intermediate rigging operations	017.2.1	Load weight calculated/determined and confirmed in accordance with the work plan
		017.2.2	Appropriate lifting or pulling devices for the movement of load are assembled or erected in accordance with the work plan
		017.2.3	Loads are connected to movement device using appropriate techniques and load connection equipment in accordance with the work plan
		017.2.4	Loads are lifted/moved in accordance with appropriate methods, techniques, planned hazard prevention and control measures, and manufacturer's recommendations and/or specifications
		017.2.5	Communications and signal methods appropriate to the work are selected and used in accordance with relevant Australian standards
		017.2.6	Load is directed to required position using appropriate signals in accordance with Australian standards
		017.2.7	Load is lowered to required position and fixed/anchored in position using appropriate methods in accordance with manufacturer's specifications and the work plan
		017.2.8	Load shifting equipment is dismantled, removed and inspected for wear in accordance with accepted codes of practice and the work plan
017.3	Complete the work	017.3.1	Work is completed and appropriate personnel notified in accordance with site/enterprise requirements
		017.3.2	Work area is cleared of waste, cleaned, restored and secured in accordance with site/enterprise procedures
		017.3.3	Plant, tools and equipment are maintained and stored in accordance with site/enterprise procedures
		017.3.4	Work completion details are finalised in accordance with site/enterprise procedures

Range Statement

Stream: Production Plant

Field: Maintenance

Equivalencies: This unit of competence is based on units 1, 2 and 3 class: intermediate rigging of the Worksafe Australia (NOHSC:1006 [1992]) National Competency Standards

Correct size of equipment may be determined by calculating safe working loads using load charts and standard calculation rules

Potential hazards may include overhead services such as steam, gas, water, telephone and power cables, uneven or unstable ground, trees, underground services, buildings and structures, other personnel and environmental influences such as lighting, noise, temperature and wind

Tools and equipment may include spanners, hammers, pinch bars, clamps, pulleys, chain blocks, and pull lifts, winches, jacks, skids, rollers, cradle timbers, chocks and wedges, packers, fish plates and bolts, feeler gauges, turfers and turn buckles

Lifting equipment may include chains, spreader beams, ropes, wire ropes, shackles and eye bolts

Appropriate signals and communication methods may include verbal, hand signals, whistles, hooters, two way radio and lights (all to the relevant Australian standard)

Resources may include cranes, hoists, drawings/plans and personnel

Fixing and anchoring methods may include bolting, wedging, riveting and tying

Intermediate rigging work may include movement of plant and equipment, steel erection, particular hoists, placement of pre-cast concrete, safety nets and static lines, mast climbers, perimeter safety screens and shutters, cantilevered crane loading platforms, slinging and directing of loads, rigging of cranes, conveyors, dredges and excavators, tilt slabs, demotion and dual lifts

Hazards which may affect demolition may include corroded members, impact forces, undermined foundations, hidden voids, unidentified services, hazardous substances and unstable structures

Work completion details may include plant and maintenance records, job cards, check sheets, updates and reporting and/or documenting equipment defects

Evidence Guide

Critical aspects of evidence

The knowledge and application of relevant sections of: Occupational, health and safety legislation; Statutory legislation; Enterprise/site safety procedures; Enterprise/site emergency procedures

Selecting and assembling lifting gear

Slinging and directing loads

Calculating load weights

Applying anchoring techniques

Applying intermediate rigging techniques

Applying demolition rigging techniques

Context of assessment

Competency Standards should be assessed in the workplace or simulated workplace and under the normal range of workplace conditions

Assessment of this unit will be supported with documentary evidence, by means of endorsement stating type and application of work

Interdependent assessment of unit

Nil

Knowledge and Skills

A knowledge of:

Occupational health and safety standards; Relevant standards, legislative requirements and codes of practice; Various types of slings and chains and their safe working load; Slinging techniques; Lifting gear/equipment; Hazard identification and control techniques; Load calculation techniques; Steel fixing techniques; Various cranes and hoists and their limitations; Various bolts and their tightening procedures; Safety equipment; Signalling methods; Demolition rigging techniques; Communication principles

The ability to:

Apply occupational health and safety standards; Apply relevant standards, legislative requirements and codes of practice; Interpret and apply plans and procedures; Select and assemble lifting gear; Sling and direct loads; Calculate load weights; Identify and apply hazard control measures; Use hand tools; Bolt and fix steel work; Work at heights; Interpret and apply appropriate signalling techniques; Apply anchoring techniques; Carry out work completion details; Apply intermediate rigging techniques; Apply demolition rigging techniques; Communicate effectively.

UTP NEG018 A
Perform Advanced Rigging Work

Descriptor: This unit refers to the rigging work associated with, but not limited to, movement of plant and equipment, all hoists, rigging of cranes, dual lifts, suspended scaffolds and fabricated hung scaffolds

Elements		Performance criteria	
018.1	Plan and prepare for the work	018.1.1	Work requirements are identified from request/work orders or equivalent and clarified/confirmed with appropriate parties or by site inspection
		018.1.2	Occupational health and safety standards, statutory requirements, relevant Australian standards, codes of practice, manufacturers' specifications, environmental requirements and enterprise procedures are identified, applied and monitored throughout the work procedure
		018.1.3	Resources required to satisfy the work plan are identified, obtained and inspected for compliance with the job specifications
		018.1.4	Relevant plans, drawings and text are selected and interpreted in accordance with the work plan
		018.1.5	Correct size, type and quantity of materials/components are determined, obtained and inspected for compliance with the job specifications
		018.1.6	Work is planned in detail including sequencing and prioritising and considerations made where appropriate for the maintenance of plant security and capacity in accordance with system/site requirements
		018.1.7	Co-ordination requirements, including requests for isolations where appropriate, are resolved with others involved, affected or required by the work
		018.1.8	Potential hazards are identified and prevention and/or control measures are selected in accordance with the work plan and site procedures
		018.1.9	Work area is prepared in accordance with work requirements and site procedures

Elements		Performance criteria	
018.2	Perform advanced rigging operations	018.2.1	Load weight calculated/determined and confirmed in accordance with the work plan
		018.2.2	Appropriate lifting or pulling devices for the movement of load are assembled or erected in accordance with the work plan
		018.2.3	Loads are connected to movement device using appropriate techniques and load connection equipment in accordance with the work plan
		018.2.4	Loads are lifted/moved in accordance with appropriate methods, techniques, planned hazard prevention and control measures, and manufacturer's recommendations and/or specifications
		018.2.5	Communications and signal methods appropriate to the work are selected and used in accordance with relevant Australian standards
		018.2.6	Load is directed to required position using appropriate signals in accordance with Australian standards
		018.2.7	Load is lowered to required position and fixed/anchored in position using appropriate methods in accordance with manufacturer's specifications and the work plan
		018.2.8	Load shifting equipment is dismantled, removed and inspected for wear in accordance with accepted codes of practice and the work plan
018.3	Complete the work	018.3.1	Work is completed and appropriate personnel notified in accordance with site/enterprise requirements
		018.3.2	Work area is cleared of waste, cleaned, restored and secured in accordance with site/enterprise procedures
		018.3.3	Plant, tools and equipment are maintained and stored in accordance with site/enterprise procedures
		018.3.4	Work completion details are finalised in accordance with site/enterprise procedures

Range Statement

Stream: Production Plant

Field: Maintenance

Equivalencies: This unit of competence is based on units 1, 2 and 3 class: advanced rigging of the Worksafe Australia (NOHSC:1006 [1992]) National Competency Standards

Correct size of equipment may be determined by calculating safe working loads using load charts and standard calculation rules

Potential hazards may include overhead services such as steam, gas, water, telephone and power cables, uneven or unstable ground, trees, underground services, buildings and structures, other personnel and environmental influences such as lighting, noise, temperature and wind

Tools and equipment may include spanners, hammers, pinch bars, clamps, pulleys, chain blocks, and pull lifts, winches, jacks, skids, rollers, cradle timbers, chocks and wedges, packers, fish plates and bolts, feeler gauges, turfers, turn buckles, gin poles and shear legs

Lifting equipment may include chains, spreader beams, ropes, wire ropes, shackles and eye bolts

Appropriate signals and communication methods may include verbal, hand signals, whistles, hooters, two way radio and lights (all to the relevant Australian standard)

Resources may include cranes, hoists, drawings/plans and personnel

Fixing and anchoring methods may include bolting, wedging, riveting and tying

Advanced rigging work may include movement of plant and equipment; steel erection; particular hoists; placement of pre-cast concrete; safety nets and static lines; mast climbers; perimeter safety screens and shutters; cantilevered crane loading platforms; slinging and directing of loads; rigging of cranes; conveyors; dredgers and excavators; tilt slabs; demotion and dual lifts, rigging of gin poles; shear legs; flying foxes and cableways; guyed derricks and structures; and suspended scaffolds and fabricated hung scaffolds

Hazards which may affect demolition may include corroded members, impact forces, undermined foundations, hidden voids, unidentified services, hazardous substances and unstable structures

Work completion details may include plant and maintenance records, job cards, check sheets, updates and reporting and/or documenting equipment defects

Evidence Guide

Critical aspects of evidence

The knowledge and application of relevant sections of: Occupational, health and safety legislation; Statutory legislation; Enterprise/site safety procedures; Enterprise/site emergency procedures

Selecting and assembling lifting gear

Slinging and directing loads

Calculating load weights

Applying advanced rigging techniques

Applying demolition rigging techniques

Context of assessment

Competency Standards should be assessed in the workplace or simulated workplace and under the normal range of workplace conditions.

Assessment of this unit will be supported with documentary evidence, by means of endorsement stating type and application of work

Interdependent assessment of unit

Nil

Knowledge and Skills

A knowledge of:

Occupational health and safety standards; Relevant standards, legislative requirements and codes of practice; Various types of slings and chains and their safe working load; Slinging techniques; Lifting gear/equipment; Hazard identification and control techniques; Load calculation techniques; Steel fixing techniques; Various cranes and hoists and their limitations; Various bolts and their tightening procedures; Safety equipment; Signalling methods; Demolition rigging techniques; Communication principles

The ability to:

Apply occupational health and safety standards; Apply relevant standards, legislative requirements and codes of practice; Interpret and apply plans and procedures; Select and assemble lifting gear; Sling and direct loads; Calculate load weights; Identify and apply hazard control measures; Use hand tools; Bolt and fix steel work; Work at heights; Interpret and apply appropriate signalling techniques; Apply anchoring techniques; Carry out work completion details; Apply advanced rigging techniques; Apply demolition rigging techniques; Communicate effectively.

UTP NEG019 A
Perform Dogging Work

Descriptor: This unit refers to the application of slinging techniques, including the selection and inspection of lifting gear, and the direction of the crane/hoist operator in the movement of the load including when the load is out of view of the operator

Elements		Performance criteria	
019.1	Plan and prepare for the work	019.1.1	Work requirements are identified from request/work orders or equivalent and clarified/confirmed with appropriate parties or by site inspection
		019.1.2	Occupational health and safety standards, statutory requirements, relevant Australian standards, codes of practice, manufacturers' specifications, environmental requirements and enterprise procedures are identified, applied and monitored throughout the work procedure
		019.1.3	Resources required to satisfy the work plan are identified, obtained and inspected for compliance with the job specifications.
		019.1.4	Relevant plans, drawings and texts are selected and interpreted in accordance with the work plan
		019.1.5	Correct size, type and quantity of materials/components are determined, obtained and inspected for compliance with the job specifications
		019.1.6	Work is planned in detail including sequencing & prioritising and considerations made where appropriate for the maintenance of plant security and capacity in accordance with system/site requirements
		019.1.7	Co-ordination requirements, including requests for isolations where appropriate, are resolved with others involved, affected or required by the work
		019.1.8	Potential hazards are identified and prevention and/or control measures are selected in accordance with the work plan and site procedures
		019.1.9	Work area is prepared in accordance with work requirements and site procedures.

Elements		Performance criteria	
		019.1.10	Where appropriate, the teams and individuals roles and responsibilities within the team are identified and, where required, assist in the provision of on-the-job training
019.2	Perform dogging work	019.2.1	Appropriate load shifting equipment is selected and inspected in accordance with the work plan
		019.2.2	Load moving is performed in accordance with planned hazard prevention & control measures, appropriate methods, techniques manufacturer's recommendations and/or specifications
		019.2.3	Communication and signal methods appropriate to the work are selected and used in accordance with relevant Australian standards
		019.2.4	Load is directed to required position using appropriate signals in accordance with Australian standards
019.3	Complete the work	019.3.1	Work is completed and appropriate personnel notified in accordance with site/enterprise requirements
		019.3.2	Work area is cleared of waste, cleaned, restored and secured in accordance with site/enterprise procedures
		019.3.3	Plant, tools and equipment are maintained and stored in accordance with site/enterprise procedures
		019.3.4	Work completion details are finalised in accordance with site/enterprise procedures

Range Statement

Stream: Production Plant

Field: Maintenance

Equivalencies: This unit of competence is based on units 1 and 2 class: dogging of the Worksafe Australia (NOHSC:1006 [1992]) National Competency Standards and unit 11.4a of the National Metal and Engineering Industry Competency Standards

Potential hazards may include trees; overhead services such as steam, gas, water, telephone and power cables; uneven or unstable ground; underground services; buildings/vessels/structures/equipment; hazardous materials and substances; other personnel; and environmental influences such as lighting, noise, temperature and wind

Tools may refer to hand tools

Load shifting equipment may include slings, rope, shackles, eye bolts and spreader beams

Appropriate signals and communication methods may include verbal, hand signals, whistles, hooters, two way radios/telephones and lights (all to the relevant Australian standard

Work completion details may include plant and maintenance records, job cards, check sheet updates and reporting and/or documenting equipment defects

Evidence Guide

Critical aspects of evidence

The knowledge and application of relevant sections of: Occupational, health and safety legislation; Statutory legislation; Enterprise/site safety procedures; Enterprise/site emergency procedures

Directing the movement of loads

Working at heights

Interpreting and applying appropriate signalling techniques

Context of assessment

Competency Standards should be assessed in the workplace or simulated workplace and under the normal range of workplace conditions

Assessment of this unit will be supported with documentary evidence, by means of endorsement stating type and application of work

Interdependent assessment of unit

Nil

Knowledge and Skills

A knowledge of:

Occupational health and safety standards; Relevant standards, legislative requirements and codes of practice; Load shifting equipment; Hazard identification and control techniques; Various cranes and hoists; Signalling methods

The ability to:

Occupational health and safety standards; Relevant standards, legislative requirements and codes of practice; Load shifting equipment; Hazard identification and control techniques; Various cranes and hoists; Signalling methods.

UTP NEG020 A
Perform Basic Scaffolding

Descriptor: This unit refers to the application of scaffolding work including, but not limited to, free standing prefabricated scaffolds, cantilevered hoist with maximum working load limit not exceeding 500kg (materials only), bracket scaffolds (tank and formwork)

Elements		Performance criteria	
020.1	Plan and prepare for the work	020.1.1	Work requirements are identified from request/work orders or equivalent and clarified/confirmed with appropriate parties or by site inspection
		020.1.2	Occupational health and safety standards, statutory requirements, relevant Australian standards, codes of practice, manufacturers' specifications, environmental requirements and enterprise procedures are identified, applied and monitored throughout the work procedure
		020.1.3	Resources required to satisfy the work plan are identified, obtained and inspected for compliance with the job specifications
		020.1.4	Relevant plans, drawings and text are selected and interpreted in accordance with the work plan
		020.1.5	Correct size, type and quantity of materials/components are determined, obtained and inspected for compliance with the job specifications
		020.1.6	Work is planned in detail including sequencing and prioritising and considerations made where appropriate for the maintenance of plant security and capacity in accordance with system/site requirements
		020.1.7	Co-ordination requirements, including requests for isolations where appropriate, are resolved with others involved, affected or required by the work
		020.1.8	Potential hazards are identified and prevention and/or control measures are selected in accordance with the work plan and site procedures

Elements		Performance criteria	
		020.1.9	Work area is prepared in accordance with work requirements and site procedures
		020.1.10	Where appropriate, the teams and individuals roles and responsibilities within the team are identified, and where required, assist in the provision of on-the-job training
020.2	Erect, secure and inspect scaffolding	020.2.1	Expected loading on the scaffold/equipment and supporting structure is determined and limitation identified using load tables and calculations in accordance with the work plan
		020.2.2	Footings are established for the scaffolding/equipment in accordance with Australian standards and the work plan
		020.2.3	Scaffolding/equipment and components are inspected for safety and compliance with job and statutory requirements
		020.2.4	Safety nets and static lines are erected as required in accordance with Australian standards
		020.2.5	Alterations and/or repairs are carried out with due regard to the critical safety and structural areas of the scaffolding/equipment in accordance with the job requirements and scaffolding principles
		020.2.6	Scaffolding/equipment is inspected to confirm stability in accordance with the work plan
		020.2.7	Inspection log is completed in accordance with requirements
020.3	Dismantle scaffolding	020.3.1	Scaffolding/equipment is inspected for damage, corrosion or wear prior to dismantling in accordance with statutory requirements and the work plan
		020.3.2	Dismantling is performed with due regard for critical structure and safety areas of the scaffolding/equipment in accordance with the work plan

Elements		Performance criteria	
020.4	Complete the work	020.4.1	Work is completed and appropriate personnel notified in accordance with site/enterprise requirements
		020.4.2	Work area is cleared of waste, cleaned, restored and secured in accordance with site/enterprise procedures
		020.4.3	Plant, tools and equipment are maintained and stored in accordance with site/enterprise procedures
		020.4.4	Work completion details are finalised in accordance with site/enterprise procedures

Range Statement

Stream: Production Plant

Field: Maintenance

Equivalencies: This unit of competence is based on units 1, 2, 3 and 4 class: basic scaffolding of the Worksafe Australia (NOHSC:1006 [1992]) National Competency Standards and incorporates unit 11.3a of the National Metal and Engineering Industry Competency Standards

Potential hazards may include trees; overhead services such as power, steam, gas, water and telephone; uneven and unstable ground; dynamic loading such as concrete pump lines; other personnel; environmental influences such as weather, lighting, noise and dust; and surrounding buildings, vessels and structures

Hazard control measures may include erection of barriers, signage and tags

Components may include steel and aluminium tube, couplers and accessories, scaffolding planks, ropes, gin wheels, portable ladders and stairs and prefabricated components

Basic scaffolding work may include free standing prefabricated scaffolds; cantilevered hoist with maximum working load limit not exceeding 500kgs (material only); ropes; gin wheels; safety net and static lines; and bracket scaffolds (tank and formwork)

Work completion details may include plant and maintenance records, job cards, check sheets updates and reporting and/or documenting equipment defects

Evidence Guide

Critical aspects of evidence

The knowledge and application of relevant sections of: Occupational, health and safety legislation; Statutory legislation; Enterprise/site safety procedures; Enterprise/site emergency procedures

Assembling and dismantling scaffolding

Applying inspection procedures

Working at heights

Context of assessment

Competency Standards should be assessed in the workplace or simulated workplace and under the normal range of workplace conditions

Assessment of this unit will be supported with documentary evidence, by means of endorsement stating type and application of work

Interdependent assessment of unit

Nil

Knowledge and Skills

A knowledge of:

Occupational health and safety standards; Relevant standards, legislative requirements and codes of practice; Scaffolding tools and equipment; Scaffolding assembly and dismantling techniques; Inspection techniques; Lifting and slinging techniques; Hazard identification and control techniques; Appropriate communication techniques; Safety equipment

The ability to:

Apply occupational health and safety standards; Apply relevant standards, legislative requirements and codes of practice; Use relevant plant, tools and equipment; Assemble and dismantle scaffolding; Apply inspection procedures; Work at heights; Sling and direct loads; Identify hazards; Use appropriate communication techniques; Carry out work completion details.

UTP NEG021 A
Perform Intermediate Scaffolding

Descriptor: This unit refers to the application of scaffolding work including, but not limited to, tube and coupler scaffolds, cantilevered and spurred scaffolds, barrow ramps and sloping platforms, mast climbers

Elements		Performance criteria	
021.1	Plan and prepare for the work	021.1.1	Work requirements are identified from request/work orders or equivalent and clarified/confirmed with appropriate parties or by site inspection
		021.1.2	Occupational health and safety standards, statutory requirements, relevant Australian standards, codes of practice, manufacturers' specifications, environmental requirements and enterprise procedures are identified, applied and monitored throughout the work procedure
		021.1.3	Resources required to satisfy the work plan are identified, obtained and inspected for compliance with the job specifications
		021.1.4	Relevant plans, drawings and text are selected and interpreted in accordance with the work plan
		021.1.5	Correct size, type and quantity of materials/components are determined, obtained and inspected for compliance with the job specifications
		021.1.6	Work is planned in detail including sequencing and prioritising and considerations made, where appropriate, for the maintenance of plant security and capacity in accordance with system/site requirements
		021.1.7	Co-ordination requirements, including requests for isolations where appropriate, are resolved with others involved, affected or required by the work
		021.1.8	Potential hazards are identified and prevention and/or control measures are selected in accordance with the work plan and site procedures
		021.1.9	Work area is prepared in accordance with work requirements and site procedures

Elements		Performance criteria	
		021.1.10	Where appropriate the teams and individuals roles and responsibilities within the team are identified and, where required, assist in the provision of on-the-job training
021.2	Erect, secure and inspect scaffolding	021.2.1	Expected loading on the scaffold/equipment and supporting structure is determined and limitation identified using load tables and calculations in accordance with the work plan
		021.2.2	Footings are established for the scaffolding/equipment in accordance with Australian standards and the work plan
		021.2.3	Scaffolding/equipment and components are inspected for safety and compliance with job and statutory requirements
		021.2.4	Safety nets and static lines are erected as required in accordance with Australian standards
		021.2.5	Alterations and/or repairs are carried out with due regard to the critical safety and structural areas of the scaffolding/equipment in accordance with the job requirements and scaffolding principles
		021.2.6	Scaffolding/equipment is inspected to confirm stability in accordance with the work plan
		021.2.7	Inspection log is completed in accordance with requirements
021.3	Dismantle scaffolding	021.3.1	Scaffolding/equipment is inspected for damage, corrosion or wear prior to dismantling in accordance with statutory requirements and the work plan
		021.3.2	Dismantling is performed with due regard for critical structure and safety areas of the scaffolding/equipment in accordance with the work plan
021.4	Complete the work	021.4.1	Work is completed and appropriate personnel notified in accordance with site/enterprise requirements
		021.4.2	Work area is cleared of waste, cleaned, restored and secured in accordance with site/enterprise procedures

Elements	Performance criteria	
	021.4.3	Plant, tools and equipment are maintained and stored in accordance with site/enterprise procedures
	021.4.4	Work completion details are finalised in accordance with site/enterprise procedures

Range Statement

Stream: Production Plant

Field: Maintenance

Equivalencies: This unit of competence is based on units 1, 2, 3 and 4 class: intermediate scaffolding of the Worksafe Australia (NOHSC:1006 [1992]) National Competency Standards and incorporates unit 11.3a of the National Metal and Engineering Industry Competency Standards

Potential hazards may include trees; overhead services such as power, steam, gas, water and telephone; uneven and unstable ground; dynamic loading such as concrete pump lines; other personnel; environmental influences such as weather, lighting, noise and dust; and surrounding buildings, vessels and structures

Hazard control measures may include erection of barriers, signage and tags

Components may include steel and aluminium tube, couplers and accessories, scaffolding planks, ropes, chains, shackles, straps and other overhead attachment gear, scaffold hoists, gin wheels, swing boat, boatswain chair, cradles, portable ladders and chairs

Intermediate scaffolding work may include prefabricated scaffolds; tube and coupler scaffolds, including tube and coupler covered ways and gantries; cantilevered hoist with working load limit not exceeding 500kgs (material only); ropes; gin wheels; safety nets and static lines; bracket scaffolds (tank and formwork); cantilevered crane loading platforms; cantilevered and spurred scaffolds; barrow ramps and sloping platforms; scaffolding associated with perimeter safety screens; and shutters and mast climbers

Work completion details may include plant and maintenance records, job cards, check sheets updates and reporting and/or documenting equipment defects

Evidence Guide

Critical aspects of evidence

The knowledge and application of relevant sections of: Occupational, health and safety legislation; Statutory legislation; Enterprise/site safety procedures; Enterprise/site emergency procedures

Assembling and dismantling scaffolding

Working at heights

Applying inspection procedures

Context of assessment

Competency Standards should be assessed in the workplace or simulated workplace and under the normal range of workplace conditions

Assessment of this unit will be supported with documentary evidence, by means of endorsement stating type and application of work

Interdependent assessment of unit

Nil

Knowledge and Skills

A knowledge of:

Occupational health and safety standards; Relevant standards, legislative requirements and codes of practice; Scaffolding tools and equipment; Scaffolding assembly and dismantling techniques; Inspection techniques; Lifting and slinging techniques; Hazard identification and control techniques; Appropriate communication techniques; Safety equipment

The ability to:

Apply occupational health and safety standards; Apply relevant standards, legislative requirements and codes of practice; Use relevant plant, tools and equipment; Assemble and dismantle scaffolding; Apply inspection procedures; Work at heights; Sling and direct loads; Identify hazards; Use appropriate communication techniques; Carry out work completion details.

UTP NEG022 A
Perform Advanced Scaffolding

Descriptor: This unit refers to the application of scaffolding work including, but not limited to, hung scaffolds, including scaffolds hanging from tubes, wire ropes and chains, and suspended scaffolds

Elements		Performance criteria	
022.1	Plan and prepare for the work	022.1.1	Work requirements are identified from request/work orders or equivalent and clarified/confirmed with appropriate parties or by site inspection
		022.1.2	Occupational health and safety standards, statutory requirements, relevant Australian standards, codes of practice, manufacturers' specifications, environmental requirements and enterprise procedures are identified, applied and monitored throughout the work procedure
		022.1.3	Resources required to satisfy the work plan are identified, obtained and inspected for compliance with the job specifications
		022.1.4	Relevant plans, drawings and texts are selected and interpreted in accordance with the work plan
		022.1.5	Correct size, type and quantity of materials/components are determined, obtained and inspected for compliance with the job specifications
		022.1.6	Work is planned in detail including sequencing and prioritising and considerations made, where appropriate, for the maintenance of plant security and capacity in accordance with system/site requirements
		022.1.7	Co-ordination requirements, including requests for isolations where appropriate, are resolved with others involved, affected or required by the work
		022.1.8	Potential hazards are identified and prevention and/or control measures are selected in accordance with the work plan and site procedures
		022.1.9	Work area is prepared in accordance with work requirements and site procedures

Elements		Performance criteria	
		022.1.10	Where appropriate, the teams and individuals roles and responsibilities within the team are identified and, where required, assist in the provision of on-the-job training
022.2	Erect, secure and inspect scaffolding	022.2.1	Expected loading on the scaffold/equipment and supporting structure is determined and limitation identified using load tables and calculations in accordance with the work plan
		022.2.2	Scaffolding/equipment and components are inspected for safety and compliance with job and statutory requirements
		022.2.3	Safety nets and static lines are erected as required in accordance with Australian standards
		022.2.4	Safety nets and static lines are erected as required in accordance with Australian standards
		022.2.5	Alterations and/or repairs are carried out with due regard to the critical safety and structural areas of the scaffolding/equipment in accordance with the job requirements and scaffolding principles
		022.2.6	Scaffolding/equipment is inspected to confirm stability in accordance with the work plan
		022.2.7	Inspection log is completed in accordance with requirements
022.3	Dismantle scaffolding	022.3.1	Scaffolding/equipment is inspected for damage, corrosion or wear prior to dismantling in accordance with statutory requirements and the work plan
		022.3.2	Dismantling is performed with due regard for critical structure and safety areas of the scaffolding/equipment in accordance with the work plan

Elements		Performance criteria	
022.4	Complete the work	022.4.1	Work is completed and appropriate personnel notified in accordance with site/enterprise requirements
		022.4.2	Work area is cleared of waste, cleaned, restored and secured in accordance with site/enterprise procedures
		022.4.3	Plant, tools and equipment are maintained and stored in accordance with site/enterprise procedures
		022.4.4	Work completion details are finalised in accordance with site/enterprise procedures

Range Statement

Stream: Production Plant

Field: Maintenance

Equivalencies: This unit of competence is based on units 1, 2, 3 and 4 class: advanced scaffolding of the Worksafe Australia (NOHSC:1006 [1992]) National Competency Standards and incorporates unit 11.3a of the National Metal and Engineering Industry Competency Standards

Potential hazards may include trees; overhead services such as power, steam, gas, water and telephone; uneven and unstable ground; dynamic loading such as concrete pump lines; other personnel; environmental influences such as weather, lighting, noise and dust; and surrounding buildings, vessels and structures

Hazard control measures may include erection of barriers, signage and tags

Components may include steel and aluminium tube, couplers and accessories, scaffolding planks, ropes, chains, shackles, straps and other overhead attachment gear, scaffold hoists, gin wheels, swing boat, boatswain chair, cradles, portable ladders and chairs

Advanced scaffolding work may include prefabricated scaffolds; tube and coupler scaffolds including tube and coupler covered ways and gantries; cantilevered hoist with working load limit not exceeding 500kgs (material only); ropes; gin wheels; safety nets and static lines; bracket scaffolds (tank and formwork); cantilevered crane loading platforms; cantilevered and spurred scaffolds; barrow ramps and sloping platforms; scaffolding associated with perimeter safety screens and shutters; mast climbers; hung scaffolds, including scaffolds hanging from tubes; wire ropes and chains; and suspended scaffolds

Work completion details may include plant and maintenance records, job cards, check sheets updates and reporting and/or documenting equipment defects

Evidence Guide

Critical aspects of evidence

The knowledge and application of relevant sections of: Occupational, health and safety legislation; Statutory legislation; Enterprise/site safety procedures; Enterprise/site emergency procedures

Assembling and dismantling scaffolding

Working at heights

Applying inspection procedures

Context of assessment

Competency Standards should be assessed in the workplace or simulated workplace and under the normal range of workplace conditions

Assessment of this unit will be supported with documentary evidence, by means of endorsement stating type and application of work

Interdependent assessment of unit

Nil

Knowledge and Skills

A knowledge of:

Occupational health and safety standards; Relevant standards, legislative requirements and codes of practice; Scaffolding tools and equipment; Scaffolding assembly and dismantling techniques; Inspection techniques; Lifting and slinging techniques; Hazard identification and control techniques; Appropriate communication techniques; Safety equipment

The ability to:

Apply occupational health and safety standards; Apply relevant standards, legislative requirements and codes of practice; Use relevant plant, tools and equipment; Assemble and dismantle scaffolding; Apply inspection procedures; Work at heights; Sling and direct loads; Identify hazards; Use appropriate communication techniques; Carry out work completion details.

UTP NEG027 A
Conduct Elevating Work Platform Operations

Descriptor: This unit refers to the inspection and pre-operational tests, positioning, setting up and operation of elevating work platforms

Elements		Performance criteria	
027.1	Inspect and test work platform	027.1.1	Occupational health and safety standards, statutory requirements, relevant Australian standards, codes of practice, manufacturer's specifications, environmental requirements and enterprise procedures are identified, applied and monitored throughout the work procedure
		027.1.2	Elevating work platform and components are inspected prior to start-up/use to ensure they are free from damage, leaks and obstructions in accordance with manufacturer's specifications and enterprise procedures
		027.1.3	Elevating work platform and its components are tested and warning systems operationally checked in accordance with manufacturer's specifications and enterprise procedures
		027.1.4	Faults or defects are identified and assessed to determine their effect on the operational efficiency of the work platform
		027.1.5	Faults or defects adversely affecting operation of the work platform are reported in accordance with enterprise procedures
		027.1.6	Results of inspection and tests are recorded in accordance with enterprise procedures
027.2	Prepare for operations	027.2.1	Work requirements are identified from request/work orders or equivalent and clarified/confirmed with appropriate parties or by site inspection
		027.2.2	Co-ordination requirements are resolved with others involved or affected by the work
		027.2.3	Potential hazards associated with equipment operations are identified and measures taken for their elimination or control in accordance with the work requirements

Elements		Performance criteria	
		027.2.4	Road signs, barriers and warning devices are positioned as required in accordance with enterprise procedures and relevant statutory regulations
027.3	Operate elevating work platforms	027.3.1	Equipment is positioned and set up in accordance with manufacturer's requirements
		027.3.2	Trial lifts are conducted to ensure the equipment is functioning in accordance with manufacturer's specifications
		027.3.3	Controls and levers are applied to ensure safe and effective operation of the equipment in accordance with manufacturer's instructions
		027.3.4	Speed and operation of equipment is in accordance with manufacturer's specifications
		027.3.5	Communication and signal methods appropriate to the task are interpreted and applied in accordance with relevant standards and enterprise procedures
		027.3.6	Equipment operations are conducted in accordance with the work plan whilst paying due regard to the security of surrounds.
		027.3.7	Load/personnel are manoeuvred into position in accordance with manufacturer's instructions and relevant standards
027.4	Complete the work	027.4.1	Elevating work platform operations are completed, appropriate personnel notified and log book/records completed in accordance with enterprise procedures
		027.4.2	Elevating work platform is left in a state of readiness for future operations in accordance with enterprise procedures

Range Statement

Stream: Production Plant

Field: Operations (mobile plant)

Equivalencies: N/A

Elevating work platforms may include boom type, scissor type, telescopic type

Pre-start checks may include inspection of hydraulic hoses, wheels and tyres free from damage and at correct pressure, safety cage

Components inspected after start-up may include gauges/warning lights, lights, horn, controls, communication equipment

Potential hazards may include bridges, surrounding buildings, trees, overhead service lines, inadequate lighting, uneven or unstable ground, other works, weather conditions

Records may include details of faulty equipment, action taken, results of testing

Appropriate parties may include supervisor or maintenance/operational personnel

Statutory requirements may include AS2550

Evidence Guide

Critical aspects of evidence

The knowledge and application of relevant sections of: Occupational, health and safety legislation; Statutory legislation; Enterprise/site safety procedures; Enterprise/site emergency procedures

Equipment capabilities and limitations

Operational procedures

Apply hand eye co-ordination

Attaching/detaching required accessories and/or attachments

Inspection and testing procedures

Preparation procedures

Operation procedures

Work completion procedures

Context of assessment

Competency Standards should be assessed in the workplace or simulated workplace and under the normal range of workplace conditions

Assessment of this unit will be supported with documentary evidence, by means of endorsement stating type and application of equipment operated

Interdependent assessment of unit

Nil

Knowledge and Skills

A knowledge of:

Occupational health and safety standards; Relevant statutory requirements and codes of practice; Relevant Australian Standards; Enterprise, site and equipment safety requirements; Elevating work platforms and associated equipment; Elevating work platform operations; Operator maintenance for elevating work platforms; Relevant communication and signal methods; Load limitations of the equipment

The ability to:

Apply occupational health and safety standards; Apply relevant statutory requirements and codes of practice; Apply relevant Australian Standards; Apply enterprise/site and equipment safety requirements; Communicate effectively; Calculate loads and capacities; Manoeuvre and position equipment; Maintain equipment records; Apply hand eye co-ordination; Recognise, control or eliminate hazards; Use hand tools.

UTP NEG028 (a to j) A
Shift and Transfer Materials (a to j qualifier)

Descriptor: This unit refers to shifting, loading and carrying of materials

Specific Unit Outcomes:

This unit is presented as a composite unit that has 10 specific unit outcomes based on the specific item of plant, machinery and/or accessory in which competence is achieved. This is done because of the high degree of commonality in process, underpinning knowledge and skill. This approach assists efficiency of delivery and assessment as well as transferability. The specific Unit outcomes are:

UTP NEG 028a A	Shift and Transfer Materials (Bulldozer)
UTP NEG 028b A	Shift and Transfer Materials (Grader)
UTP NEG 028c A	Shift and Transfer Materials (Scraper)
UTP NEG 028d A	Shift and Transfer Materials (Front end loader)
UTP NEG 028e A	Shift and Transfer Materials (Skidsteer loader)
UTP NEG 028f A	Shift and Transfer Materials (Telescopic materials handler-loader)
UTP NEG 028g A	Shift and Transfer Materials (Backhoe)
UTP NEG 028h A	Shift and Transfer Materials (Excavator)
UTP NEG 028i A	Shift and Transfer Materials (Bobcats – wheeled and tracked)
UTP NEG 028j A	Shift and Transfer Materials (Borers and related attachments)

Elements		Performance criteria	
028.1	Plan and prepare work	028.1.1	Safety issues are identified to comply with enterprise/site requirements
		028.1.2	Machine requirements/work identified and verified from job specifications
		028.1.3	Quality assurance requirements recognised and adhered to
		028.1.4	Locations of services identified from plans and drawings
		028.1.5	Features identified from site drawings
		028.1.6	Services are located on site, verified and marked
		028.1.7	Work schedules are developed in accordance with job requirements
		028.1.8	Pre-operational checks are carried out on plant in accordance with manufacturer's recommendations and site requirements

Elements		Performance criteria	
		028.1.9	Where appropriate, the teams and individuals roles and responsibilities within the team are identified and, where required, assist in the provision of on-the-job training
028.2	Operate machine	028.2.1	Start up, park up and shut down procedures carried out in accordance with manufacturer's and/or site specific requirements
		028.2.2	Method of operating machine adjusted to accommodate various weather and ground conditions
		028.2.3	Safe grip and productivity maintained in varied conditions
		028.2.4	Machine is operated in accordance with manufacturer's and/or site requirements to produce smooth movement of attachments
		028.2.5	Machine is monitored to detect deviations from required operating conditions and faults acted upon or reported in accordance with site instructions/requirements
		028.2.6	Emergency procedures are carried out in accordance with manufacturer's and/or site requirements
		028.2.7	Abnormal operating conditions of the machine are identified and reported in accordance with requirements
		028.2.8	Load is shifted and/or transferred in accordance with site requirements
		028.2.9	Most appropriate load shifting device selected
		028.2.10	Accessories are used to shift and transfer material in accordance with manufacturer's manual and job specifications
028.3	Complete documentation	028.3.1	Post operational checks and minor maintenance are carried out on machine and/or accessories in accordance with manufacturer's recommendations and site requirements

Elements	Performance criteria
	028.3.2 Documentation is updated and plant problems, movements, abnormalities and status are reported and logged in accordance with enterprise/site procedures

Range Statement

Stream: Production Plant

Field: Operations (mobile plant)

Equivalencies: This unit of competence incorporates the National Building and Construction Industry Training Council National Competency Standard no. co3077, co 3042, co3043, co3018, co3028, co3043, co3059, co3076, co3021, co3023, co3009, co3007 and co3005, and in relation to bulldozers unit 14.0, graders unit 15.0 and front end loaders 12.0 of the National Coal Sector Competency Standards project (open-cut production) and incorporates unit 7.1a and 11.10a of the National Metal and Engineering Industry Competency Standards

This unit recognises the commonality of skills and knowledge that exists for the composite unit as well as the additional specific unit outcome(s); which are to be reported. Therefore, competency can be displayed on one, some or all of the following ten plant, machines and/or accessories:

UTP NEG 028a A	Shift and Transfer Materials (Bulldozer)
UTP NEG 028b A	Shift and Transfer Materials (Grader)
UTP NEG 028c A	Shift and Transfer Materials (Scraper)
UTP NEG 028d A	Shift and Transfer Materials (Front end loader)
UTP NEG 028e A	Shift and Transfer Materials (Skidsteer loader)
UTP NEG 028f A	Shift and Transfer Materials (Telescopic materials handler-loader)
UTP NEG 028g A	Shift and Transfer Materials (Backhoe)
UTP NEG 028h A	Shift and Transfer Materials (Excavator)
UTP NEG 028i A	Shift and Transfer Materials (Bobcats – wheeled and tracked)
UTP NEG 028j A	Shift and Transfer Materials (Borers and related attachments)

Safety standards may include relevant sections of occupational health and safety legislation enterprise safety rules, relevant state and federal legislation, national standards for plant, environmental legislation and codes of practise

Site hazards may include power lines, trees, overhead service lines, surrounding buildings, other equipment, earthworks, obstructions, underground services, bridges, facilities, dangerous/hazardous material and topographical variances

Information and documentation sources may include verbal and written communications; enterprise/site safety rules documentation/form(s); equipment and alarm manuals; dedicated computer equipment; enterprise/site standing and operating instructions; enterprise/site logbook; and manufacturer's operation and maintenance manuals

Technical and operational indicators may include stimuli (audio, smell, touch, visual), local indicators and recorders, computers and alarms (visible and or audible)

Communications may be by means of telephone, two way radio, pager, public address system, facsimile, computer (electronic mail), operating log (written or verbal), whistle or hand signal

Tests may include alarm and protection tests and performance tests

Appropriate personnel for consultation and giving or receiving direction may include supervisor/team leader or equivalent, technical and engineering officers or equivalent, contractor staff, other production staff and maintenance staff

Test, fault finding and operating tools may include hand and power tools and inspection procedures

Operating environment may be during inclement or otherwise harsh weather conditions, in wet/noisy/dusty/hot areas, during night periods and on uneven or unstable ground

Faults and abnormal operating conditions may include loss of hydraulic oil pressure, loss of motor oil pressure, electrical breakdowns, loss of cooling water or loss of tyre pressure

Minor maintenance may include fuel checks, water checks, oil checks, greasing, cleaning, tyre or track inspections and minor adjustments

Operations may include in shifting and transferring materials, excavations, levelling, scraping, stripping soils, relocating, constructing, mixing, clearing and transporting

Evidence Guide

Critical aspects of evidence

The knowledge and application of relevant sections of: Occupational, health and safety legislation; statutory legislation; Enterprise/site safety procedures; Enterprise/site emergency procedures

Equipment capabilities and limitations

Minor maintenance procedures

Attaching/detaching required accessories and/or attachments

Preparation and planning of work

Operating and manoeuvring machines and attachments

Safely slinging loads

Shifting and transferring materials

Context of assessment

Competency Standards should be assessed in the workplace or simulated workplace and under the normal range of workplace conditions

Assessment of this composite unit will result in recording of one or more unit outcomes based on the type and application of plant, machinery or accessories operated. Individuals having been assessed as competent for one or more of these units will have achieved it on particular types of plant, machinery or accessories which are respectively reflected in the unit titles. The alpha qualifier (a to j) after the base unit code of UTP NEG 028 A is attributed on the basis of the plant, machinery or accessory type, which is also reflected in the qualifier after the Title name "Shift and Transfer Materials (plant type)". Types of plant, machinery and accessories refer only to the generic name and not the size, model or specific item.

Interdependent assessment of unit

Nil

Knowledge and Skills

A knowledge of:

Relevant occupational health and safety regulations; Relevant statutory legislation; Relevant enterprise/site safety procedures; Enterprise/site emergency procedures; Operational and maintenance procedures; Equipment characteristics, technical capabilities and limitations; Basic geological and survey data; Attachments, their capabilities and limitations; Excavation and levelling techniques; Vehicle recording systems; Warning and directional signals; Levelling devices; Pre-start, start up and shut down procedures; Enterprise recording procedures; Communications principles; Introduction to power production plant; Typical arrangements of power production plant; Mathematics; Safe operating principles; Levelling devices, which may include laser levelling

The ability to:

Apply relevant occupational health and safety regulations; Apply relevant statutory legislation; Apply relevant enterprise/site safety procedures; Apply enterprise/site emergency procedures and techniques; Organising resources where applicable; Operate and maintain machinery and accessories; Use hand tools; Respond to emergencies; Apply pre-start, start up and shut down procedures; Communicate effectively; Inspect and diagnose machines and attachments; Shift and transfer materials; Apply data analysis techniques and tools.

UTP NEG029 A
Conduct Fork-lift Operations

Descriptor: This unit refers to the inspection and pre-operational tests, driving, manoeuvring and the lifting and relocating of loads using a fork-lift

Elements		Performance criteria	
029.1	Inspect and test fork-lift	029.1.1	Occupational health and safety standards, statutory requirements, relevant Australian standards, codes of practice, manufacturers' specifications, environmental requirements and enterprise procedures are identified, applied and monitored throughout the work procedure
		029.1.2	Fork-lift and components are inspected prior to start up to ensure they are free from damage, leaks and obstructions in accordance with manufacturer's specifications and enterprise procedures
		029.1.3	Fork-lift and its components are tested after start-up and warning systems operationally checked in accordance with manufacturer's specifications and enterprise procedures
		029.1.4	Faults or defects are identified and assessed to determine their effect on the operational efficiency of the fork-lift
		029.1.5	Faults or defects adversely affecting operation are identified and reported in accordance with enterprise procedures
		029.1.6	Results of inspection and testing are recorded and reported in accordance with enterprise procedures
		029.1.7	Where appropriate, the teams and individuals roles and responsibilities within the team are identified and, where required, assist in the provision of on-the-job training
029.2	Operate fork-lift	029.2.1	Engine is started and instruments and gauges are monitored to ensure safe operation in accordance with manufacturer's guidelines and specifications
		029.2.2	Fork-lift is steered, manoeuvred and positioned in accordance with manufacturer's recommendations and enterprise procedures

Elements		Performance criteria	
		029.2.3	Movements are smooth and controlled and are within limits of the fork-lift in accordance with manufacturer's specifications
		029.2.4	Engine power is managed by coordinating gear selection to maintain operating efficiency within the torque range and in accordance with manufacturer's specifications
		029.2.5	Fork-lift is operated with regard to traffic flow and work area conditions in accordance with enterprise procedures
		029.2.6	Performance indicators are monitored and any abnormalities reported to the appropriate authority in accordance with enterprise procedures
		029.2.7	Fork-lift is stopped and parked in accordance with manufacturer's guidelines and enterprise procedures
029.3	Manoeuvre and position loads	029.3.1	Load characteristics are identified to ensure appropriate loading and unloading procedures are followed in accordance with enterprise procedures
		029.3.2	Loads are lifted ensuring weight limits are adhered to and load is spread evenly on forks in accordance with manufacturer's specifications and enterprise procedures
		029.3.3	Appropriate load shifting device selected
		029.3.4	Loads are carried, and speed is ensured to be, within designated limits, and obstacles in path of movement are negotiated in accordance with enterprise procedures
		029.3.5	Loads are lowered and set down smoothly, forks withdrawn and fork-lift reversed ensuring path is clear in accordance with manufacturer's guidelines and enterprise procedures
029.4	Complete the work	029.4.1	Fork-lift operations are completed and appropriate personnel notified in accordance with enterprise procedures
		029.4.2	Fork-lift is left in a state of readiness for further operations in accordance with enterprise procedures

Range Statement

Stream: Production Plant

Field: Operations (mobile plant)

Equivalencies: This unit of competence is based on units 92-0001 (fork-lift operator) of the National Road Transport Industry Competency Standards and unit 16.0 of the National Coal Sector Competency Standards project (underground production) and incorporates unit 11.10a of the National Metal and Engineering Industry Competency Standards

Pre-start checks may include inspection of hydraulic hoses and gas lines for leaks and checking that gas bottles are charged; wheels and tyres are free from damage and at the correct pressure; chains are tensioned correctly, safety cage undamaged, engine oil and water levels and brake and clutch fluid levels are to manufacturer's specification, drivers compartment is free of obstacles and the battery is charged

Components inspected after start-up may include gauges/warning lights, brake lights and lights, indicators, park brake, steering and foot brake, revolving warning light/siren, horn, controls and transmission

Records may include details of faulty equipment, action taken and results of testing

Appropriate authorities may include the supervisor or maintenance personnel

Performance indicators may include warning lights, oil pressure gauge and temperature gauge

Load characteristics may include hazardous cargo which may contain flammable, explosive, poisonous, corrosive or radioactive substances

Fork-lift operations may include stacking or de-stacking a load and loading or unloading a vehicle

State of readiness may mean that the batteries are to be charged, fluid levels are to be topped up and fuelling is carried out

Evidence Guide

Critical aspects of evidence

The knowledge and application of relevant sections of: Occupational, health and safety legislation; Statutory legislation; Enterprise/site safety procedures; Enterprise/site emergency procedures

Equipment capabilities and limitations

Operational procedures

Applying hand eye co-ordination

Attaching/detaching accessories/attachments

Safely slinging loads

Pre-start, start up and shut down procedures

Operating and manoeuvring vehicles and attachments

Context of assessment

Competency Standards should be assessed in the workplace or simulated workplace and under the normal range of workplace conditions

Assessment of this unit will be supported with documentary evidence, by means of endorsement stating type and application of equipment operated

Interdependent assessment of unit

Nil

Knowledge and Skills

A knowledge of:

Occupational health and safety standards; Relevant statutory requirements and codes of practice; Relevant Australian standards; Enterprise, site and equipment safety requirements; Fork-lift equipment and associated attachments; Fork-lift operations; Operator maintenance; Communications principles; Load limitations; Introduction to power production plant; Typical arrangement of power production plant; Mathematics; Safe operating principles

The ability to:

Apply occupational health and safety standards; Apply relevant statutory requirements and codes of practice; Apply relevant Australian standards; Apply enterprise site and equipment safety requirements; Communicate effectively; Start up, park up and shut down fork-lift; Lift, transfer and position loads; Operate fork-lift and its associated attachments; Apply hand-eye co-ordination; Apply data analysis techniques and tools; Use hand tools; Maintain equipment records; Calculate safe working loads.

UTP NEG030 A
Operate Lifting and Load Shifting Equipment (1)

Descriptor: This unit refers to the operation of specified cranes and lifting equipment that does not require a licence and that may be used to facilitate the installation, modification or maintenance of equipment associated with the power generation sector

Elements		Performance criteria	
30.1	Plan and prepare for the work	30.1.1	Work requirements are identified from request/work orders or equivalent and clarified/confirmed with appropriate parties or by site inspection
		30.1.2	Occupational health and safety standards, statutory requirements, relevant Australian standards, codes of practice, manufacturers' specifications, environmental requirements and enterprise procedures are identified, applied and monitored throughout the work procedure
		30.1.3	Resources required to satisfy the work plan are identified, obtained and inspected for compliance with the job specifications
		30.1.4	Work is planned in detail including sequencing and prioritising and the determination of the appropriate method in accordance with site/enterprise procedures
		30.1.5	Co-ordination requirements including access and egress are resolved with others involved, affected or required by the work
		30.1.6	Potential hazards are identified and prevention and/or control measures are selected in accordance with the work plan and site procedures
		30.1.7	Materials, equipment and resources required to satisfy the work plan are identified, obtained and inspected for compliance with the job specifications
		30.1.8	Where appropriate, the teams and individuals roles and responsibilities within the team are identified and, where required, assist in the provision of on-the-job training

Elements		Performance criteria	
30.2	Operate the equipment	30.2.1	Pre-operational checks are conducted on equipment and attachments to ensure readiness for operation in accordance with manufacturer's instructions/operating manual
		30.2.2	Communication and signal methods appropriate to the task are interpreted and applied in accordance with relevant Australian standards and enterprise procedures
		30.2.3	Equipment is positioned and set up using correct procedures in accordance with job requirements
		30.2.4	Controls and levers are applied to ensure safe and effective operation of equipment in accordance with manufacturer's instructions
		30.2.5	Trial lifts are conducted for loads of near capacity or unusual proportions and inspections made to ensure load is correctly slung and lifting equipment is functioning in accordance with manufacturer's specifications
		30.2.6	Speed and operation of equipment is in accordance with manufacturer's specifications and job/statutory requirements
		30.2.7	Equipment operations are conducted in accordance with the work plan whilst paying due regard to the security of the surrounds
		30.2.8	Appropriate load shifting device(s) selected
		30.2.9	Load is hoisted, manoeuvred and lowered into position using all relevant equipment movements in accordance with relevant Australian standards
30.3	Conduct operator maintenance	30.3.1	Inspection and fault finding are conducted in accordance with manufacturer's specifications or enterprise requirements
		30.3.2	Operational servicing and minor maintenance is carried out to manufacturer's specifications or enterprise requirements

Elements		Performance criteria	
30.4	Complete the work	30.4.1	Work is completed and appropriate personnel notified in accordance with site/enterprise requirements
		30.4.2	Plant, tools and equipment are maintained and stored in accordance with site/enterprise procedures
		30.4.3	Work completion details are finalised in accordance with site/enterprise procedures

Range Statement

Stream: Production Plant

Field: Maintenance

Equivalencies: This unit of competence is based on units 1, 2 and 3 class: specified cranes of the Worksafe Australia (NOHSC: 7019 [1992]) National Competency Standards and incorporates unit 7.1a and 11.22a of the National Metal and Engineering Industry Competency Standards

Specified cranes and lifting equipment may include bridge or gantry cranes (remote operation only); vehicle loading cranes (less than 10 metre tonnes capacity); and non-slewing, non-articulating mobile cranes (not exceeding three tonnes capacity)

Pre-operational checks may include testing emergency controls, safety devices, lighting and alarm systems

Operation of equipment may be conducted in all weather conditions and by day and night

Potential hazards may include surrounding buildings, barricades, inadequate lighting uneven or unstable ground, other personnel, vessels and structures

Attachments may include shackles, spreader beams, chains, slings, plate, dogs and grabs

Operator maintenance may include lubrication and housekeeping tasks

Work completion details may include equipment maintenance records, job cards, check sheets and reporting and/or documenting equipment defects

Evidence Guide

Critical aspects of evidence

The knowledge and application of relevant sections of: Occupational, health and safety legislation; Statutory legislation; Enterprise/site safety procedures; Enterprise/site emergency procedures

Manoeuvring and positioning load shifting equipment

Safely slinging loads

Lifting and transferring loads within equipment capacity

Conducting minor operator maintenance

Context of assessment

Competency Standards should be assessed in the workplace or simulated workplace and under the normal range of workplace conditions

Assessment of this unit will be supported with documentary evidence, by means of endorsement stating type and application of equipment operated

Interdependent assessment of unit

Nil

Knowledge and Skills

A knowledge of:

Occupational health and safety standards; Relevant statutory requirements and codes of practice; Relevant Australian standards; Communication principles and signal methods; Equipment operation, limitations and procedures; Equipment attachments; Slings, ropes and chains; Operator maintenance; Hazard control; Introduction to power production plant; Typical arrangements of power production plant; Mechanics; Mathematics; Safe Operating Principles

The ability to:

Apply occupational health and safety standards; Apply relevant statutory requirements and codes of practice; Apply relevant Australian standards; Interpret and apply communication and signal methods; Manoeuvre and position load shifting equipment; Lift and transfer loads within equipment capacity; Operate equipment and attachments; Identify, control or eliminate hazards; Apply hand-eye co-ordination; Use hand tools; Maintain equipment records; Conduct operator maintenance; Communicate effectively; Apply data analysis techniques and tools.

UTP NEG031 A
Operate Lifting and Load Shifting Equipment (2)

Descriptor: This unit refers to the operation of particular cranes and hoists which require a licence/ certificate as required by Worksafe Australia

Elements		Performance criteria	
31.1	Plan and prepare for the work	31.1.1	Work requirements are identified from request/work orders or equivalent and clarified/confirmed with appropriate parties or by site inspection
		31.1.2	Occupational health and safety standards, statutory requirements, relevant Australian standards, codes of practice, manufacturers' specifications, environmental requirements and enterprise procedures are identified, applied and monitored throughout the work procedure
		31.1.3	Resources required to satisfy the work plan are identified, obtained and inspected for compliance with the job specifications
		31.1.4	Work is planned in detail including sequencing and prioritising and the determination of the appropriate method in accordance with site/enterprise procedures
		31.1.5	Co-ordination requirements including access and egress are resolved with others involved, affected or required by the work
		31.1.6	Potential hazards are identified and prevention and/or control measures are selected in accordance with the work plan and site procedures
		31.1.7	Materials equipment and resources required to satisfy the work plan are identified, obtained and inspected for compliance with the job specifications
		31.1.8	Where appropriate the teams and individuals roles and responsibilities within the team are identified, and where required, assist in the provision of on-the-job training
31.2	Operate the equipment	31.2.1	Pre-operational checks are conducted on equipment and attachments to ensure readiness for operation in accordance with manufacturer's instructions/operating manual

Elements		Performance criteria	
		31.2.2	Communication and signal methods appropriate to the task are interpreted and applied in accordance with relevant Australian standards and enterprise procedures
		31.2.3	Equipment is positioned and set up using correct procedures in accordance with job requirements
		31.2.4	Controls and levers are applied to ensure safe and effective operation of equipment in accordance with manufacturer's instructions
		31.2.5	Trial lifts are conducted for loads of near capacity or unusual proportions and inspections made to ensure load is correctly slung and lifting equipment is functioning in accordance with manufacturer's specifications
		31.2.6	Speed and operation of equipment is in accordance with manufacturer's specifications and job/statutory requirements
		31.2.7	Equipment operations are conducted in accordance with the work plan whilst paying due regard to the security of the surrounds
		31.2.8	Appropriate shifting device(s) selected
		31.2.9	Load is hoisted, manoeuvred and lowered into position using all relevant equipment movements in accordance with relevant Australian standards
31.3	Conduct operator maintenance	31.3.1	Inspection and fault finding are conducted in accordance with manufacturer's specifications or enterprise requirements
		31.3.2	Operational servicing and minor maintenance is carried out to manufacturer's specifications or enterprise requirements
31.4	Complete the work	31.4.1	Work is completed and appropriate personnel notified in accordance with site/enterprise requirements.
		31.4.2	Plant, tools and equipment are maintained and stored in accordance with site/enterprise procedures.

Elements	Performance criteria
	31.4.3 Work completion details are finalised in accordance with site/enterprise procedures.

Range Statement

Stream: Production Plant

Field: Maintenance

Equivalencies: This unit of competence is based on units 1, 2 and 3 class (category cranes) and units 1 and 2 (category hoists) of the Worksafe Australia (NOHSC: 1006 [1992]) National Competency Standards and incorporates unit 7.1a and 11.22a of the National Metal And Engineering Industry Competency Standards

Particular cranes and hoists may include tower cranes; derrick cranes; portal boom cranes; bridge and gantry cranes; vehicle loading cranes (10 metre tonnes capacity and above); non-slewing mobile cranes (greater than 3 tonnes capacity); slewing mobile cranes (up to 20 tonnes) (up to 60 tonnes) (up to 100 tonnes) (open/over 100 tonnes); materials hoists (cantilever platforms); and hoists (personnel and materials)

Pre-operational checks may include testing emergency controls, safety devices, lighting, alarm systems and communication equipment

Operation of equipment may be conducted in all weather conditions and by day and night

Potential hazards may include surrounding buildings, barricades, inadequate lighting uneven or unstable ground, other personnel, vessels, structures and radio interference

Attachments may include shackles, spreader beams, chains, slings, plate, dogs, grabs, gin pole and fly jib

Instructions may include operators manual and information charts on equipment limitations (i.e. radii, jib angle, boom extension and load capacities)

Operator maintenance may include lubrication and housekeeping tasks

Work completion details may include equipment maintenance records, job cards, check sheets and reporting and/or documenting equipment defects

Evidence Guide

Critical aspects of evidence

The knowledge and application of relevant sections of: Occupational, health and safety legislation; Statutory legislation; Enterprise/site safety procedures; Enterprise/site emergency procedures

Manoeuvring and positioning load shifting equipment

Safely slinging loads

Conducting operator maintenance

Lifting and transferring loads within equipment capacity

Context of assessment

Competency Standards should be assessed in the workplace or simulated workplace and under the normal range of workplace conditions

Assessment of this unit will be supported with documentary evidence, by means of endorsement stating type and application of equipment operated

Interdependent assessment of unit

Nil

Knowledge and Skills

A knowledge of:

Occupational health and safety standards; Relevant statutory requirements and codes of practice; Relevant Australian standards; Communication principles and signal methods; Equipment operation, limitations and procedures; Equipment attachments; Slings, ropes and chains; Operator maintenance; Hazard control; Introduction to power production plant; Typical arrangements of power production plant; Mechanics; Mathematics; Safe operating principles

The ability to:

Apply occupational health and safety standards; Apply relevant statutory requirements and codes of practice; Apply relevant Australian standards; Interpret and apply communication and signal methods; Manoeuvre and position load shifting equipment; Lift and transfer loads within equipment capacity; Operate equipment and attachments; Identify, control or eliminate hazards; Apply hand-eye co-ordination; Use hand tools; Maintain equipment records; Conduct operator maintenance; Communicate effectively; Apply data analysis techniques and tools.

UTP NEG032 A
Operate explosive powered tool

Descriptor: This unit refers to the operation of an explosive powered tool commonly known as a ramset gun

Elements		Performance criteria	
032.1	Plan and prepare for the work	032.1.1	Work requirements are identified from request/work orders or equivalent and clarified/confirmed with appropriate parties or by site inspection
		032.1.2	Occupational health and safety standards, statutory requirements, relevant Australian standards, codes of practice, manufacturers' specifications, environmental requirements and enterprise procedures are identified, applied and monitored throughout the work procedure
		032.1.3	Resources required to satisfy the work plan are identified, obtained and inspected for compliance with the job specifications
		032.1.4	Relevant plans, drawings and text are selected and interpreted in accordance with the work plan
		032.1.5	Correct size, type and quantity of materials/components are determined, obtained and inspected for compliance with the job specifications
		032.1.6	Work is planned in detail including sequencing & prioritising and considerations made, where appropriate, for the maintenance of plant security and capacity in accordance with system/site requirements
		032.1.7	Co-ordination requirements, including requests for isolations where appropriate, are resolved with others involved, affected or required by the work
		032.1.8	Potential hazards are identified and prevention and/or control measures are selected in accordance with the work plan and site procedures
		032.1.9	Work area is prepared in accordance with work requirements and site procedures

Elements		Performance criteria	
		032.1.10	Where appropriate, the teams and individuals roles and responsibilities within the team are identified and, where required, assist in the provision of on-the-job training
032.2	Operate the tool	032.2.1	Correct fasteners and charges are selected for the task in accordance with manufacturer's specifications and statutory requirements
		032.2.2	Operator observes all safety precautions prior to firing in accordance with statutory and site requirements
		032.2.3	Unsafe or faulty tools are identified and marked for repair according to designated procedures before, during and after use
		032.2.4	Tool is discharged in accordance with industry and statutory requirements
		032.2.5	Final job inspection is performed and permits are relinquished as required in accordance with the work plan
		032.2.6	Tool and charges are separately stored in accordance with industry and statutory requirements
032.3	Complete the work	032.3.1	Work is completed and appropriate personnel notified in accordance with site/enterprise requirements
		032.3.2	Work area is cleared of waste, cleaned, restored and secured in accordance with site/enterprise procedures
		032.3.3	Explosive tool and equipment is maintained and stored in accordance with site/enterprise procedures
		032.3.4	Work completion details are finalised in accordance with site/enterprise procedures

Range statement

Stream:	Production Plant
Field:	Maintenance
Equivalencies:	This unit incorporates unit 18.2A of the National Metal and Engineering Industry Competency Standards

Instructions may be verbal or written; tool may include direct acting tools and indirect acting tools; materials may include explosive charge and fasteners; fastening procedures will be governed by the type and density of structure; working environment may be affected by weather and location

Safety equipment may include gloves; eye protection; ear protection; dust mask, barriers and relevant signs

Evidence guide

Context of assessment

Competency Standards should be assessed in the workplace or simulated workplace and under the normal range of workplace conditions

Assessment of this unit will be supported with documentary evidence, by means of endorsement stating type and application of work

Critical aspects of evidence

It is essential that competence is assessed in the critical aspects of: the knowledge and application of relevant sections of: occupational, health and safety legislation, statutory legislation, enterprise/site safety procedures and enterprise/site emergency procedures; operating explosive powered tools; selecting charge; maintaining explosive powered tools

Knowledge and Skills

A knowledge of:

Occupational health and safety standards; relevant statutory requirements and codes of practice; environmental requirements; explosive powered hand tools; charges and fasteners; types of materials; types of surface; fastening procedures; explosive powered tool maintenance procedures; communication principles; introduction to power production plant; typical arrangements of power production plant; mathematics; safe operating principles

The ability to:

Apply occupational health and safety standards; apply relevant statutory requirements and codes of practice; apply environmental requirements; operate explosive powered tools; use hand and portable power tools; select charge; select fasteners; Identify structural materials; maintain explosive powered tool; communicate effectively

UTP NEG038 A
Transport Plant and Equipment

Descriptor: This unit refers to the transportation of plant and equipment

Elements		Performance criteria	
038.1	Plan and prepare for transport	038.1.1	Safety requirements are identified in order to comply with enterprise/site transporting procedures
		038.1.2	Transport requirements are confirmed in accordance with work scheduling
		038.1.3	Characteristics of the load are identified and considered to ensure that appropriate loading and unloading procedures are followed
038.2	Obtain necessary permits	038.2.1	Permit application forms are completed in accordance with requirements
		038.2.2	Load is assessed so as not to exceed safe working capacity of vehicle and in accordance with manufacturer's specifications and regulatory authorities requirements
038.3	Load/unload plant and/or equipment	038.3.1	Vehicle inspected and checked prior to loading
		038.3.2	If required, start up, park up, shut down procedures are carried out in accordance with manufacturer's and/or enterprise/site procedures
		038.3.3	Machine loaded and unloaded safely ensuring no injury to personnel or damage to property, equipment and load
		038.3.4	Calculations on dimensions (height and width) of load and transport are made for over-sized loads
		038.3.5	Lashings are stored in accordance with storage procedures
038.4	Secure load	038.4.1	Load is secured using appropriate securing equipment and lashed to anchorage points in accordance with securing systems and manufacturer's specifications
		038.4.2	Lashing equipment is secured to vehicle to ensure integrity during transport

Elements		Performance criteria	
038.5	Operate transport vehicle	038.5.1	Pre-operational checks are carried out on plant in accordance with manufacturer's recommendations and site requirements
		038.5.2	Attachments set at correct height/position, and machine driven in accordance with traffic regulations and manufacturer's instructions
		038.5.3	Start up, park up, shut down procedures are carried out in accordance with manufacturer's and/or enterprise/site procedures
		038.5.4	Hazards are identified and avoided on public roads and work site
		038.5.5	Traffic regulations are adhered to
038.6	Complete documentation	038.6.1	Post operational checks and minor maintenance is carried out on machine and/or accessories in accordance with manufacturer's recommendations and site requirements
		038.6.2	Documentation is updated and plant problems, movements, abnormalities and status are reported and logged in accordance with enterprise/site procedures

Range statement

Stream: Production Plant

Field: Operations (Mobile Plant)

Equivalencies: This unit of competence incorporates the National Building and Construction Industry Training Council National Competency Standard Nos. CO3001 and CO3005

Plant and equipment may include: backhoe; bobcat; bulldozer, clamshell; continuous bucket trencher; dragline; dump truck; excavator; fork-lift; front end loader; gradall; grader; material spreader; paver; pipelayer; profile planer; recycler; roller; scraper; skid steer loader; soil compactor; telescopic materials handler; tractor; water cart and related accessories/attachments

Safety standards may include : relevant sections of occupational health and safety legislation; national standards for plant; enterprise safety rules; relevant state and federal legislation

Hazards may include: power lines; trees; overhead service lines; surrounding buildings; other equipment; earthworks; obstructions; underground services; bridges; tunnels; facilities and dangerous materials

Information and documentation sources may include: verbal and written communications; enterprise safety rules documentation/form(s); equipment and alarm manuals; dedicated computer equipment; standing enterprise/site and operating instructions; enterprise/site log books and manufacturer's operation and maintenance manuals

Technical and operational indicators may include: stimuli (audio, smell, touch, visual); local indicators and recorders and alarms (visible and or audible)

Communications may be: by means of telephone; two way radio; pager; public address system; facsimile; computer (electronic mail); operating logs; written, verbal, whistle or hand signal

Tests may include: alarm and protection tests and performance tests

Appropriate personnel for consultation or giving or receiving direction may include: supervisor/team leader or equivalent; technical and engineering officers or equivalent; contractor staff; other production staff and maintenance staff

Test fault finding and operating tools may include: power and hand tools

Operating environment may be during inclement or otherwise harsh weather conditions, in wet/noise/dusty/hot areas or during night periods

Faults and abnormal operating conditions may include: loss of hydraulic oil pressure; loss of motor oil pressure; electrical breakdowns; loss of cooling water and loss of tyre pressure

Minor maintenance may include: fuel check; water checks; oil checks; greasing, cleaning, tyre or track inspections and minor adjustments

Evidence guide

Critical aspects of assessment

It is essential that competence is assessed in the critical aspects of: the knowledge and applications of relevant sections of: occupational health and safety; statutory legislation; enterprise/site safety procedures; enterprise/site emergency procedures; pre-start, start up and shut down procedures; operating and manoeuvring vehicles and attachments; applying for and following road transport and traffic authority permits; loading/off loading procedures

Context of assessment

Competency Standards should be assessed on site or in a simulated work environment under the normal range of workplace conditions.

Assessment of this unit will be supported with documentary evidence by means of endorsement stating type and application of equipment operated.

Knowledge and Skills

A knowledge of:

Relevant occupational health and safety regulations; relevant statutory legislation; relevant enterprise/site safety procedures; enterprise/site emergency procedures and techniques; operational and maintenance procedures; equipment capabilities and limitations; road transport and traffic authorities permits; basic geological and survey data; loading/off loading procedures; vehicle recording systems; warning and directional signals; pre-start, start up and shut down procedures; enterprise recording procedures; communications principles; introduction to power production plant; typical arrangements of power production plant; mathematics; safe operating principles

The ability to:

Apply relevant occupational health and safety regulations; apply relevant statutory legislation; apply relevant enterprise/site safety procedures; apply enterprise/site emergency procedures and techniques; plan and organise resources; prepare and operate transport vehicle; use hand tools; communicate effectively; apply data analysis techniques and tools; transport loads; apply pre-start, start up and shut down procedures

UTP NEG045 A
Make and Spread a Stockpile

Descriptor: This unit refers to the making and spreading of stockpiles

Elements		Performance criteria	
045.1	Plan and prepare work	045.1.1	Safety issues are identified to comply with enterprise/site requirements
		045.1.2	Machine requirements identified and verified from job specifications
		045.1.3	Quality assurance requirements recognised and adhered to
		045.1.4	Locations of services identified from plans and drawings (water, power, telephone)
		045.1.5	Features (such as structures, designated parking areas, haul roads and unstable ground) are identified from site drawings
		045.1.6	Services located on site verified and marked
		045.1.7	Work schedule devised consistent with job requirements
		045.1.8	Pre-operational checks are carried out on plant according to manufacturer's recommendations and site requirements
		045.1.9	Materials to be stockpiled identified from drawings and specifications
		045.1.10	Prepare pad to receive coal for stockpiling, removal of contamination, drainage
		045.1.11	Warning devices put in place prior to the commencement of stockpiling coal
045.2	Make stockpiles	045.2.1	Start up, park up, shut down procedures carried out in accordance with manufacturer's and or site specific requirements
		045.2.2	Machine and attachments are adjusted for varied weather and ground conditions
		045.2.3	Safe grip and productivity maintained in varied conditions
		045.2.4	Control levers used to produce smooth movement of attachments in a safe manner as described in manufacturer's manual

Elements		Performance criteria	
		045.2.5	Machine is monitored and observed to detect deviations from required operating conditions and faults acted upon are reported in accordance with site instructions/requirements
		045.2.6	Emergency procedures are carried out in accordance with manufacturer's and/or site requirements
		045.2.7	Traffic flow and work area conditions are monitored and anticipated to facilitate safe operations
		045.2.8	Inspection and fault finding are carried out in accordance with manufacturer's and/or site requirements
		045.2.10	Slope and height formed to job specifications and industry tolerances
		045.2.11	Coal is packed tightly to prevent air ingress to prevent fires and weather channelling from rain water
045.3	Spread piles	045.3.1	Soil/rock/coal is safely removed from stockpiles
		045.3.2	Site standard practices, including housekeeping, are carried out and reviewed, where necessary, to prevent contamination
045.4	Monitor and control contamination	045.4.1	Visual inspections and sampling results are monitored and reported to maintain specifications
		045.4.2	Site standard practices, including housekeeping are carried out and reviewed where necessary to prevent contamination.
045.5	Complete documentation	045.5.1	Post operational check and minor maintenance is carried out on machine and/or accessories in accordance with manufacturer's recommendations and site requirements
		045.5.2	Documentation is updated and plant problems, movements, abnormalities and status are reported and logged in accordance with enterprise/site procedures

Range statement

Stream: Production Plant

Field: Operations (Mobile Plant)

Equivalencies: This unit of competence is mapped to National Building and Construction Industry Training Council National Competency Standard No. CO3020

Plant and equipment may include: bulldozers

Safety standards may include: relevant sections of occupational health and safety legislation; enterprise safety rules; relevant state and federal legislation; national standards for plant

Site hazards may include: power lines; trees; overhead service lines; surrounding buildings; other equipment; earthworks; obstructions; underground services; bridges; facilities; dangerous material; fires within coal pile (creating holes unseen) and slippery conditions when wet

Information and documentation sources may include: verbal and written communications; enterprise/site safety rules documentation/form(s); equipment and alarm manuals; dedicated computer equipment; standing enterprise/site and operating instructions; enterprise/site log book and manufacturer's operation and maintenance manuals

Technical and operational indicators may include: stimuli (audio, smell, touch, visual); local indicators and recorders; computers and alarms (visible and or audible)

Communications may be by means of: telephone, two way radio; pager; public address system; facsimile; computer (electronic mail); operating log; written or verbal whistle; hand signals; sirens; beacons; barriers; signs and notices

Tests may include: alarm and protection tests and performance tests

Appropriate personnel for consultation or giving or receiving direction may include: supervisor/team leader or equivalent; technical and engineering officers or equivalent; contractor staff; other production staff and maintenance staff

Test, fault finding and operating tools may include: hand and power tools

Operating environment may be: during inclement or otherwise harsh weather conditions, in wet/noisy/dusty/hot areas or during night periods

Faults and abnormal operating conditions may include: loss of hydraulic oil pressure; loss of motor oil pressure; electrical breakdowns; loss of cooling water; loss of tyre pressure and loss of track

Minor maintenance may include: fuel checks; water checks; oil checks; greasing; cleaning; tyre or track inspections and minor adjustments

Evidence guide

Critical aspects of evidence

It is essential that competence is assessed in the critical aspects of: the knowledge and applications of relevant sections of: occupational health and safety; statutory legislation; enterprise/ site safety procedures; enterprise/ site emergency procedures; equipment capabilities and limitations; minor maintenance procedures; attaching/detaching required accessories and/or attachments; preparation and planning of work; operating and manoeuvring machines and attachments; shifting and transferring materials - making a stockpile

Context of assessment

Competency Standards should be assessed on site or in a simulated work environment under the normal range of workplace conditions.

Assessment of this unit will be supported with documentary evidence by means of endorsement stating type and application of equipment operated.

Knowledge and Skills

A knowledge of:

Relevant occupational health and safety regulations; relevant statutory legislation; relevant enterprise/site safety procedures; enterprise/site emergency procedures; operational and maintenance procedures; equipment characteristics, technical capabilities and limitations; basic geological and survey data; attachments, their capabilities and limitations; excavation and levelling techniques; vehicle recording systems; warning and directional signals; levelling devices; pre start, start up and shut down procedures; enterprise recording procedures; communications principles; coal storing principles and techniques; introduction to power production plant; typical arrangements of power production plant; mathematics; safe operating principles; levelling devices, which may include laser levelling

The ability to:

Apply relevant occupational health and safety regulations; apply relevant statutory legislation; apply relevant enterprise/site safety procedures; apply enterprise/site emergency procedures and techniques; organise resources where applicable; operate and maintain machinery and accessories; use hand tools; respond to emergencies; apply pre start, start up and shut down procedures; communicate effectively; inspect and diagnose machines and attachments; shift and transfer materials; apply data analysis techniques and tools; stockpile coal

UTP NEG056 A
Drive a Locomotive

Descriptor: This unit refers to the operation of a locomotive associated with coal transport on private lines

Elements		Performance criteria	
056.1	Plan and prepare for work	056.1.1	Work requirements are identified from request/work orders or equivalent and clarified/confirmed with appropriate parties or by site inspection
		056.1.2	Occupational health and safety standards, statutory requirements, relevant Australian standards, codes of practice, manufacturer's specifications, environmental requirements and enterprise procedures are identified, applied and monitored throughout the work procedure
		056.1.3	Materials, equipment and resources required to satisfy job plan are identified, requisitioned, obtained and inspected for compliance with job specifications
		056.1.4	Co-ordination requirements are resolved with others involved in, or affected by, the work
		056.1.5	Pre-start checks are conducted in accordance with job and enterprise requirements
056.2	Operate locomotive	056.2.1	Engine is started and brought to operational condition in accordance with manufacturer's guidelines and standard operating procedures
		056.2.2	Vehicle controls and systems are used to ensure smooth and effective operations in accordance with standard operating procedures and job requirements
		056.2.3	Vehicle is operated within equipment limitations and gauges and systems are monitored and responded to in accordance with manufacturer's specifications and site requirements
		056.2.4	Towing and pushing is conducted in accordance with authorised equipment and connections capabilities
		056.2.5	Work is completed in accordance with agreed plan and outcomes and within the operating capacity of the equipment

Elements		Performance criteria	
056.3	Conduct minor maintenance	056.3.1	Inspections and fault finding checks are conducted in accordance with manufacturer's and/or site requirements
		056.3.2	Routine operational servicing is conducted including lubrication and housekeeping requirements in accordance with manufacturer's or site requirements
		056.3.3	Minor maintenance is conducted in accordance with manufacturer's and site requirements
056.4	Complete the work	056.4.1	Engine is cleaned, refuelled and safety checked; defects recorded and reported to appropriate personnel; and returned to appropriate storage area in accordance with site requirements
		056.4.2	Work completion details are finalised in accordance with site requirements

Range statement

Stream: Production Plant

Field: Operations

Equivalencies: N/A

Maintenance may include minor repairs and replacing of parts

Servicing may include lubricating, water and fuel checks

Work completion details may include time sheets, job cards, plans, records, logs, maintenance charts and work orders

Evidence guide

Critical aspects of evidence

It is essential that competence is assessed in the critical aspects of: the knowledge and applications of relevant sections of occupational health and safety, statutory legislation, enterprise/site safety procedures and enterprise/site emergency procedures; preparing for work; operating locomotive; conducting minor maintenance

Context of assessment

Competency Standards should be assessed on site or in a simulated work environment under the normal range of workplace conditions

Assessment of this unit will be supported with documentary evidence by means of endorsement stating type and application of equipment operated

Knowledge and Skills

A knowledge of:

Relevant occupational health and safety regulations; relevant statutory legislation; relevant enterprise/site safety procedures; enterprise/site emergency procedures; signals associated with locomotive driving; instruments and gauges; maintenance requirements; coupling requirements; braking systems

The ability to:

Apply relevant occupational health and safety regulations; apply relevant statutory legislation; apply relevant enterprise/site safety procedures; apply enterprise/site emergency procedures and techniques; interpret warning signals; interpret instruments and gauges; apply hand and eye co-ordination; use communication systems; interpret instructions; perform maintenance duties; start and operate locomotive; couple, tow and push rail cars

UTP NEG057 A

Conduct Coal Wagon Shunting and Tippling Operations

Descriptor: This unit refers to the shunting of coal wagons and their subsequent unloading

Elements		Performance criteria	
057.1	Plan and prepare for work	057.1.1	Work requirements are identified from request/work orders or equivalent and clarified/confirmed with appropriate parties or by site inspection
		057.1.2	Occupational health and safety standards, statutory requirements, relevant Australian standards, codes of practice, manufacturer's specifications, environmental requirements and enterprise procedures are identified, applied and monitored throughout the work procedure
		057.1.3	Materials, equipment and resources required to satisfy job plan are identified, requisitioned, obtained and inspected for compliance with job specifications
		057.1.4	Co-ordination requirements are resolved with others involved in, or affected by, the work
057.2	Conduct shunting operations	057.2.1	Wagons are collected from pick-up point and moved to destination mindful of load and length of rake in accordance with job plan/work requirements
		057.2.2	Brake operations of wagons are carried out in accordance with the job plan/work requirements
		057.2.3	Wagons are disconnected as required for distribution in accordance with the job plan/work requirements
		057.2.4	Operations of points are undertaken as required and in accordance with the job plan/work requirements
		057.2.5	Contact is maintained at all times with the motive power in accordance with the job plan/work requirements
		057.2.6	Rope and capstan are used as required for wagon placement in accordance with the job plan/work requirements

Elements		Performance criteria	
057.3	Conduct coal tippler operations	057.3.1	Size and types of wagons for tippling are identified to determine operational methods in accordance with work requirements
		057.3.2	Wagons/wagon are/is secured for tippling in accordance with work requirements
		057.3.3	Dust suppression controls are initiated and wagons/wagon are/is tippled in accordance with work requirements
		057.3.4	Lubrication requirements are identified and undertaken in accordance with work requirements
057.4	Complete the work	057.4.1	Coal spillages are identified and cleared away in accordance with work requirements
		057.4.2	Unloaded wagons are collected and rake made up for movement to dispersal point in accordance with the job plan/work requirements
		057.4.3	Vacuum brakes are reconnected if required in accordance with the job plan/work requirements
		057.4.4	Documentation is updated, log sheets maintained and equipment problems, movements abnormalities and status are reported and logged in accordance with enterprise/site procedures

Range statement

Stream: Production Plant

Field: Operations

Equivalencies: N/A

Materials and equipment may include shunting poles, two way radios, hand tools, oil and/or greases

Evidence guide

Critical aspects of evidence

It is essential that competence is assessed in the critical aspects of: the knowledge and applications of relevant sections of occupational health and safety, statutory legislation, enterprise/site safety procedures and enterprise/site emergency procedures; preparing for work; conducting shunting and tippler operations

Context of assessment

Competency Standards should be assessed on site or in a simulated work environment under the normal range of workplace conditions

Assessment of this unit will be supported with documentary evidence by means of endorsement stating type and application of equipment operated

Knowledge and Skills

A knowledge of:

Relevant occupational health and safety regulations; relevant statutory legislation; relevant enterprise/site safety procedures; enterprise/site emergency procedures; rail wagons; wagon braking systems; coupling requirements; dust suppression methods; warning signals; communication systems; shunting operations; enterprise recording systems

The ability to:

Apply relevant occupational health and safety regulations; apply relevant statutory legislation; apply relevant enterprise/site safety procedures; apply enterprise/site emergency procedures and techniques; interpret warning signals; operate coal tippler; conduct shunting operations; use communication systems; apply dust suppression methods; use recording systems

UTP NEG058 A
Install and Maintain Hydraulic/Pneumatic Components

Descriptor: This unit refers to the installation, repair and/or maintenance of fluid power components on stationary/mobile equipment

Elements		Performance criteria	
058.1	Plan and prepare for the work	058.1.1	Work requirements are identified from request/work orders or equivalent and clarified/confirmed with appropriate parties or by site inspection
		058.1.2	Occupational health and safety standards, statutory requirements, relevant Australian standards, codes of practice, manufacturers' specifications, environmental requirements and enterprise procedures are identified, applied and monitored throughout the work procedure
		058.1.3	Resources required to satisfy the work plan are identified, obtained and inspected for compliance with the job specifications
		058.1.4	Relevant plans, drawings and texts are selected and interpreted in accordance with the work plan
		058.1.5	Correct size, type and quantity of materials/components are determined, obtained and inspected for compliance with the job specifications
		058.1.6	Work is planned in detail including sequencing and prioritising and considerations made, where appropriate, for the maintenance of plant security and capacity in accordance with system/site requirements
		058.1.7	Co-ordination requirements, including requests for isolations where appropriate, are resolved with others involved, affected or required by the work
		058.1.8	Potential hazards are identified and prevention and/or control measures are selected in accordance with the work plan and site procedures
		058.1.9	Work area is prepared in accordance with work requirements and site procedures

Elements		Performance criteria	
058.2	Remove hydraulic/ pneumatic components	058.2.1	Required isolations are confirmed, where appropriate, in accordance with site requirements.
		058.2.2	Fluid power components are disconnected in accordance with the work plan
		058.2.3	Components are removed in a manner which will assist in replacement in accordance with site requirements
		058.2.4	Components are inspected for abnormalities in accordance with the work plan
058.3	Maintain fluid power components	058.3.1	Components are identified and prepared for maintenance in accordance with the work plan
		058.3.2	Visual inspections and testing are carried out applying hydraulic and pneumatic principles in accordance with the work plan
		058.3.3	Maintenance is performed in accordance with manufacturer's specifications and site requirements
		058.3.4	Components are dismantled, cleaned and examined to verify tolerances using appropriate techniques and procedures to determine replacement, overhaul, or repair in accordance with the work plan
		058.3.5	Dimensional inspection is performed with precision measuring devices to ensure compliance with specifications and results recorded in accordance with the work plan
		058.3.6	Faulty items are identified, repaired/overhauled using appropriate techniques and standards in accordance with the work plan
		058.3.7	Replacement items are selected, inspected and prepared for installation in accordance with manufacturer's specifications and the work plan
		058.3.8	Components are refitted in accordance with manufacturer's specifications and the work plan

Elements		Performance criteria	
058.4	Replace components	058.4.1	Site is prepared for fluid power component replacement in accordance with the work plan
		058.4.2	Fluid power components are replaced in accordance with the work plan and manufacturer's specifications
		058.4.3	Fluid power components are aligned and connected in accordance with the work plan
		058.4.4	All connections are leak/pressure tested in accordance with manufacturer's specifications and site requirements
		058.4.5	Machinery/plant and components are tested and adjusted as required in accordance with manufacturer's specifications and site requirements
058.5	Complete the work	058.5.1	Work is completed and appropriate personnel notified in accordance with site/enterprise requirements
		058.5.2	Work area is cleared of waste, cleaned, restored and secured in accordance with site/enterprise procedures
		058.5.3	Plant, tools and equipment are maintained and stored in accordance with site/enterprise procedures
		058.5.4	Work completion details are finalised in accordance with site/enterprise procedures

Range statement

Stream: Production Plant

Field: Maintenance

Equivalencies: This unit of competence incorporates units 18.19A and 10.6A of the National Metal and Engineering Competency Standards

Hydraulic components may include rams, actuators, relays, hydraulic operated tools, motors, governors and relays

Pneumatic components may include actuators, relays, rams, tools and compressors

Hydraulic and pneumatic principles may include both small signal control and power operating mediums

Measuring tools may include micrometers; dial test indicators; slip gauges; surface plate; depth gauge; verniers

Details of maintenance may be clarified by diagnosis; work place inspection; consultation with other parties/operators

Maintenance may include repair; inspection and modification; overhaul; lubrication; servicing; test running

Work completion details may include plant and maintenance records; job cards; check sheets; on device labelling updates; reporting and/or documenting equipment defects

Work site environment may be affected by nearby plant or processes, eg chemical, heat, dust, noise, gas and oil

Isolations can refer to electrical/mechanical or other associated processes

Evidence guide

Context of assessment

Competency Standards should be assessed in the workplace or simulated workplace and under the normal range of workplace conditions.

Assessment of this unit will be supported with documentary evidence, by means of endorsement stating type and application of work.

Critical aspects of evidence

It is essential that competence is assessed in the critical aspects of the knowledge and application of relevant sections of occupational, health and safety legislation, statutory legislation, enterprise/site safety procedures and enterprise/site emergency procedures; preparation and planning of work; removal techniques; maintenance techniques and procedures; installation techniques and procedures; completion of work procedures

Knowledge and Skills

A knowledge of:

Occupational health and safety; hydraulic/pneumatic equipment; properties of liquids and gases; precision measuring equipment; seals and gaskets; valves and porting principles; hydraulic/pneumatic principles; specialised tools and jigs; bearings; relevant materials and components; technical drawings and data; data recording techniques; hand and portable power tools; diagnostic and testing techniques; plant and systems; design and construction of pipework

The ability to:

Apply occupation health and safety standards; identify and use precision measuring equipment; identify and select tools and materials; identify and use relevant test equipment; manufacture and install seals and gaskets; select and use specialised tools and jigs; use technical drawings and data; use hand and portable power tools; apply testing techniques; apply hydraulic and pnuematic principles; dismantle and assemble components to specified tolerances; communicate effectively

UTP NEG059 A

Install and Maintain Industrial Pipework

Descriptor: This unit refers to all work associated with the installation, maintenance, and fabrication of industrial pipework and may involve fault finding and repairs

Elements		Performance criteria	
059.1	Plan and prepare for the work	059.1.1	Work requirements are identified from request/work orders or equivalent and clarified/confirmed with appropriate parties or by site inspection
		059.1.2	Occupational health and safety standards, statutory requirements, relevant Australian standards, codes of practice, manufacturers' specifications, environmental requirements and enterprise procedures are identified, applied and monitored throughout the work procedure
		059.1.3	Resources required to satisfy the work plan are identified, obtained and inspected for compliance with the job specifications
		059.1.4	Relevant plans, drawings and texts are selected and interpreted in accordance with the work plan
		059.1.5	Correct size, type and quantity of materials/components are determined, obtained and inspected for compliance with the job specifications
		059.1.6	Work is planned in detail including sequencing and prioritising and considerations made, where appropriate, for the maintenance of plant security and capacity in accordance with system/site requirements
		059.1.7	Co-ordination requirements, including requests for isolations where appropriate, are resolved with others involved, affected or required by the work
		059.1.8	Potential hazards are identified and prevention and/or control measures are selected in accordance with the work plan and site procedures
		059.1.9	Work area is prepared in accordance with work requirements and site procedures

Elements		Performance criteria	
		059.1.10	Where appropriate, the teams and individuals roles and responsibilities within the team are identified, and where required, assist in the provision of on-the-job training
059.2	Fabricate and install pipe work	059.2.1	Required isolations are confirmed, where appropriate, in accordance with site requirements.
		059.2.2	Pipe runs are identified, calculations performed and sketches made of the planned installation in accordance with the work plan
		059.2.3	Pipe work is fabricated using appropriate techniques and equipment in accordance with the work plan
		059.2.4	Pipe work is levelled and aligned and installed/coupled in accordance with the work plan
059.3	Maintain industrial pipework	059.3.1	Pipe work found to be faulty is repaired/replaced to conform to site requirements or manufacturer's specifications
		059.3.2	Pipe work modifications/alterations are undertaken in accordance with site requirements and manufacturers specifications
		059.3.3	Machinery/plant returned to service and pipe work monitored and adjusted in accordance with the work plan
059.4	Complete the work	059.4.1	Work is completed and appropriate personnel notified in accordance with site/enterprise requirements
		059.4.2	Work area is cleared of waste, cleaned, restored and secured in accordance with site/enterprise procedures
		059.4.3	Plant, tools and equipment are maintained and stored in accordance with site/enterprise procedures
		059.4.4	Work completion details are finalised in accordance with site/enterprise procedures

Range statement

Stream: Production Plant

Field: Maintenance

Equivalencies: This unit of competence incorporates unit 5.36A of the National Metal and Engineering Competency Standards

Pipe work may be fabricated from diverse material including, ABS, PVC, polyurethane, copper, stainless steel, galvanised steel, black steel, copper/nickel, concrete and mineral fibre

Tools and equipment may include stocks, dyes, threading machine, hydraulic benders, hand benders, hand and power cutters, welders, plastic heat gun, spirit level, grinders, jigs and lifting devices

Fittings/components may include couplings, screw fittings and flanges

Pipes may contain or have contained water, gas, air or chemicals of a hazardous nature

Pipe work may be protected by protective coatings

Details of maintenance may be clarified by diagnosis and work place inspection

Maintenance may include repair, inspection, modification and overhaul

Work completion details may include plant and maintenance records, job cards, check sheets, on device labelling updates and reporting and/or documenting equipment defects

Work site environment may be affected by nearby plant or processes, e.g. chemical, heat, dust, noise, gas and oil

Isolations can refer to electrical/mechanical or other associated processes

Evidence guide

Context of assessment

Competency Standards should be assessed in the workplace or simulated workplace and under the normal range of workplace conditions.

Assessment of this unit will be supported with documentary evidence, by means of endorsement stating type and application of work.

Critical aspects of evidence

It is essential that competence is assessed in the critical aspects of: the knowledge and application of relevant sections of occupational, health and safety legislation, statutory legislation, enterprise/site safety procedures and enterprise/site emergency procedures; preparation and planning of work; pipe work fabrication techniques and procedures; maintenance techniques and procedures; installation techniques and procedures; completion of work procedures

Knowledge and Skills

A knowledge of:

Occupational health and safety; pipe work materials and their applications; precision measuring equipment; seals and gaskets; quality assurance/quality control; specialised tools and jigs; levelling and alignment; rigging and lifting; relevant materials and components; technical drawings and data; data recording techniques; hand and portable power tools; testing techniques; relevant plant and systems; isolation procedures; communication principles; principles of fluid power; protective coatings

The ability to:

Apply occupational health and safety standards; identify and use measuring equipment; apply pipe work fabrication and installation techniques; manufacture and install seals and gaskets; apply levelling and alignment techniques; use technical drawings and data; identify and select materials and components; apply data analysis techniques; use hand and portable power tools; apply relevant testing techniques; apply dismantling and reassembling techniques; apply relevant maintenance procedures; recognise worn/damaged components; communicate effectively; apply relevant tools and jigs; apply fluid power principles

UTP NEG060 A
Install and Maintain Complex Mechanical Seals

Descriptor: This unit refers to all work associated with the installation and maintenance of complex mechanical seals and may involve fault finding, diagnosis and repairs.

Elements		Performance criteria	
060.1	Plan and prepare for the work	060.1.1	Work requirements are identified from request/work orders or equivalent and clarified/confirmed with appropriate parties or by site inspection
		060.1.2	Occupational health and safety standards, statutory requirements, relevant Australian standards, codes of practice, manufacturers' specifications, environmental requirements and enterprise procedures are identified, applied and monitored throughout the work procedure
		060.1.3	Resources required to satisfy the work plan are identified, obtained and inspected for compliance with the job specifications
		060.1.4	Relevant plans, drawings and texts are selected and interpreted in accordance with the work plan
		060.1.5	Correct size, type and quantity of materials/components are determined, obtained and inspected for compliance with the job specifications
		060.1.6	Work is planned in detail including sequencing and prioritising and considerations made, where appropriate, for the maintenance of plant security and capacity in accordance with system/site requirements
		060.1.7	Co-ordination requirements, including requests for isolations where appropriate, are resolved with others involved, affected or required by the work
		060.1.8	Potential hazards are identified and prevention and/or control measures are selected in accordance with the work plan and site procedures
		060.1.9	Work area is prepared in accordance with work requirements and site procedures

Elements		Performance criteria	
		060.1.10	Where appropriate, the teams and individuals roles and responsibilities within the team are identified and, where required, assist in the provision of on-the-job training
060.2	Remove seals for maintenance	060.2.1	Required isolations are confirmed where appropriate, in accordance with site requirements
		060.2.2	Seals are identified in accordance with the work plan
		060.2.3	Seals are removed in a manner which will assist in replacement in accordance with the work plan
		060.2.4	Seals are inspected for abnormalities in accordance with the work plan
060.3	Maintain complex seals	060.3.1	Maintenance is performed in accordance with manufacturers specifications and site procedures
		060.3.2	Seal assemblies are dismantled using appropriate engineering principles and technical procedures in accordance with the job plan and site requirements
		060.3.3	Component parts are clearly marked and sketches produced as required for identification in accordance with the job plan and site requirements
		060.3.4	Component wear and clearances are determined using precise measuring techniques and appropriate test equipment in accordance with manufacturer's specifications and site requirements
		060.3.5	Components found to be faulty are repaired, replaced and/or adjusted to conform with manufacturer's specifications and site requirements
		060.3.6	New components are inspected for compliance to required specifications and prepared for reassembly according to manufacturer's specifications/site requirements
		060.3.7	Component parts are refitted to seal assemblies according to manufacturer's specifications/site requirements

Elements		Performance criteria	
		060.3.8	Modifications/alterations are undertaken in accordance with site requirements
060.4	Replace/install complex seals	060.4.1	Site is prepared for seal replacement in accordance with the work plan
		060.4.2	Seals are replaced in accordance with the work plan and manufacturer's specifications
		060.4.3	All fastenings are torqued in accordance with manufacturer's specifications and site requirements
		060.4.4	Machinery/plant is test run, monitored and adjusted as required in accordance with manufacturer's specifications and site requirements
060.5	Complete the work	060.5.1	Work is completed and appropriate personnel notified in accordance with site/enterprise requirements
		060.5.2	Work area is cleared of waste, cleaned, restored and secured in accordance with site/enterprise procedures
		060.5.3	Plant, tools and equipment are maintained and stored in accordance with site/enterprise procedures
		060.5.4	Work completion details are finalised in accordance with site/enterprise procedures

Range statement

Stream: Production Plant

Field: Maintenance

Equivalencies: This unit of competence incorporates units 18.12A of the National Metal and Engineering Competency Standards

Complex/specialised seals may include generator hydrogen seals, double acting mechanical seals, floating seals and turbine labyrinth glands

Test equipment may include feeler gauge, dial gauge, bearing blue, micrometers, flexi gauge, leads and go/no-go gauges

Tools and equipment may include micrometers, verniers, dial test indicators, slip gauges, hand tools, customised mandrels, digital height gauges, internal micrometers, oxyacetylene gear, depth gauges, air grinders, jigs and fixtures, customised spanners, electronic internal micrometers, appropriate lifting devices, heated oil bath and induction heaters

Details of maintenance may be clarified by diagnosis and work place inspection

Maintenance may include repair, inspection, modification, overhaul, lubrication, servicing and test running

Work completion details may include plant/maintenance records, job cards, check sheets, on device labelling updates and reporting/documenting equipment defects

Work site environment may be affected by nearby plant or processes, e.g. chemical, heat, dust, noise, gas and oil

Isolations can refer to electrical/mechanical or other associated processes

Evidence guide

Critical aspects of evidence

It is essential that competence is assessed in the critical aspects of:-

The knowledge and application of relevant sections of: occupational, health and safety legislation, statutory legislation, enterprise/site safety procedures and enterprise/site emergency procedures; preparation and planning of work; removal techniques; maintenance techniques and procedures; installation techniques and procedures; completion of work procedures

Context of assessment

Competency Standards should be assessed in the workplace or simulated workplace and under the normal range of workplace conditions.

Assessment of this unit will be supported with documentary evidence, by means of endorsement stating type and application of work.

Knowledge and Skills

A knowledge of:

Occupational health and safety; complex mechanical seals; precision measuring equipment; seals and gaskets (types and materials); bearings (anti-friction and plain); quality assurance/quality control; specialised tools and jigs; levelling and aligning principles; rigging and lifting techniques; relevant materials and components; technical drawings and data; data recording techniques; hand and portable power tools; diagnostic and testing techniques; relevant plant and systems; isolation procedures; heating techniques; communication principles

The ability to:

Apply occupational health and safety standards; identify and use measuring equipment; apply sealing principles; manufacture and install seals and gaskets; install bearings (anti-friction and plain); use technical drawings and data; identify and select materials and components; use hand and portable power tools; apply diagnostic and testing techniques; apply dismantling and reassembling techniques; apply installation and maintenance procedures; apply data analysis techniques; recognise worn/damaged components; communicate effectively

UTP NEG061 A
Conduct Complex Levelling and Alignment

Descriptor: This unit refers to the advanced alignment of plant and machinery and may include high speed rotating plant

Elements		Performance criteria	
061.1	Plan and prepare for the work	061.1.1	Work requirements are identified from request/work orders or equivalent and clarified/confirmed with appropriate parties or by site inspection
		061.1.2	Occupational health and safety standards, statutory requirements, relevant Australian standards, codes of practice, manufacturers' specifications, environmental requirements and enterprise procedures are identified, applied and monitored throughout the work procedure
		061.1.3	Resources required to satisfy the work plan are identified, obtained and inspected for compliance with the job specifications
		061.1.4	Relevant plans, drawings and texts are selected and interpreted in accordance with the work plan
		061.1.5	Correct size, type and quantity of materials/components are determined, obtained and inspected for compliance with the job specifications
		061.1.6	Work is planned in detail including sequencing and prioritising and considerations made, where appropriate, for the maintenance of plant security and capacity in accordance with system/site requirements
		061.1.7	Co-ordination requirements, including requests for isolations where appropriate, are resolved with others involved, affected or required by the work
		061.1.8	Potential hazards are identified and prevention and/or control measures are selected in accordance with the work plan and site procedures
		061.1.9	Work area is prepared in accordance with work requirements and site procedures

Elements	Performance criteria	
	061.1.10	Where appropriate, the teams and individuals roles and responsibilities within the team are identified, and where required, assist in the provision of on-the-job training
061.2 Perform alignment	061.2.1	Required isolations are confirmed where appropriate in accordance with enterprise/site requirements
	061.2.2	Measurements are taken and recorded to facilitate compliance with manufacturer's specifications and future job requirements
	061.2.3	Levelling and alignment calculations are performed and sketches made as required in accordance with the work plan
	061.2.4	Plant and machinery is levelled and aligned, and adjustments made to ensure compliance with manufacturer's specifications and the work plan
	061.2.5	Final alignment inspections are undertaken and fastenings are torqued in accordance with manufacturer's specifications and the work plan
	061.2.6	Plant and machinery is test run, monitored and adjusted as required in accordance with manufacturer's specifications and job/site requirements
061.3 Complete the work	061.3.1	Work is completed and appropriate personnel notified in accordance with site/enterprise requirements
	061.3.2	Work area is cleared of waste, cleaned, restored and secured in accordance with site/enterprise procedures
	061.3.3	Plant, tools and equipment are maintained and stored in accordance with site/enterprise procedures
	061.3.4	Work completion details are finalised in accordance with site/enterprise procedures

Range statement

Stream: Production Plant

Field: Maintenance

Equivalencies: This unit of competence incorporates unit 18.9A of the National Metal and Engineering Competency Standards

Advanced alignment may include concentricity and ovality checks and adjustments, offsets and thermal expansion checks and adjustments, pre-load centralising and adjustments to within tenths of a thousandth of one inch

Advanced/complex alignment typically would be of three or more components

Equipment and tools may include bearings, couplings, seals, hydraulic tools, rigging equipment, measuring instruments, optical levels, laser levels, electronic levels, slip gauges, dumpy levels and other associated levelling and aligning equipment

Plant and machines may include turbine rotor and boiler feed pumps

Work completion details may include plant and maintenance records, job cards and check sheets updating

Work site environment may be affected by nearby plant or process, eg, heat, noise, dust, oil, water, chemical

Isolations can refer to electrical or process

Evidence guide

Critical aspects of evidence

It is essential that competence is assessed in the critical aspects of: the knowledge and application of relevant sections of occupational, health and safety legislation, statutory legislation, enterprise/site safety procedures and enterprise/site emergency procedures; preparation and planning of work; using precision measuring equipment; applying levelling and aligning principles; calculating and applying correct adjustment techniques; completion of work procedures

Context of assessment

Competency Standards should be assessed in the workplace or simulated workplace and under the normal range of workplace conditions.

Assessment of this unit will be supported with documentary evidence, by means of endorsement stating type and application of work.

Knowledge and Skills

A knowledge of:

Occupational health and safety standards; precision measuring equipment; advanced levelling and aligning principles; couplings; engineering mathematical techniques; rigging and lifting principles; shimming and packing materials; bearings and seals; technical drawings and data; data recording techniques; hand and portable power tools; fastening devices; associated plant and systems; communication principles

The ability to:

Apply occupational health and safety standards; use precision measuring equipment; apply advanced levelling and aligning principles; apply engineering mathematical techniques; use hand and portable power tools; use and update, technical drawings and data; identify types and characteristics of couplings, seals and bearings; apply data recording techniques; work to precise tolerances; use rigging and lifting techniques; calculate and apply correct adjustment techniques; apply testing techniques; communicate effectively

UTP NEG062 A
Install and Maintain Mechanical Valves

Descriptor: This unit refers to the fault finding, diagnosis, repair and/or overhaul of mechanical valves, but excluding any associated servo or actuating unit

Elements		Performance criteria	
062.1	Plan and prepare for the work	062.1.1	Work requirements are identified from request/work orders or equivalent and clarified/confirmed with appropriate parties or by site inspection
		062.1.2	Occupational health and safety standards, statutory requirements, relevant Australian standards, codes of practice, manufacturers' specifications, environmental requirements and enterprise procedures are identified, applied and monitored throughout the work procedure
		062.1.3	Resources required to satisfy the work plan are identified, obtained and inspected for compliance with the job specifications
		062.1.4	Relevant plans, drawings and texts are selected and interpreted in accordance with the work plan
		062.1.5	Correct size, type and quantity of materials/components are determined, obtained and inspected for compliance with the job specifications
		062.1.6	Work is planned in detail including sequencing and prioritising and considerations made where appropriate for the maintenance of plant security and capacity in accordance with system/site requirements
		062.1.7	Co-ordination requirements, including requests for isolations where appropriate, are resolved with others involved, affected or required by the work
		062.1.8	Potential hazards are identified and prevention and/or control measures are selected in accordance with the work plan and site procedures
		062.1.9	Work area is prepared in accordance with work requirements and site procedures

Elements		Performance criteria	
		062.1.10	Where appropriate, the teams and individuals roles and responsibilities within the team are identified and, where required, assist in the provision of on-the-job training
062.2	Remove valves for maintenance	062.1.1	Required isolations are confirmed where appropriate in accordance with site requirements
		062.2.2	Valve is disconnected in accordance with the work plan
		062.2.3	Valve is removed in a manner which will assist in replacement in accordance with the work plan
		062.2.4	Valve is inspected for abnormalities in accordance with the work plan.
062.3	Perform valve maintenance	062.3.1	Maintenance is performed in accordance with manufacturers specifications and the work plan
		062.3.2	Valve is dismantled, clearly marked for identification and relevant sketches drawn in accordance with the work plan
		062.3.3	Components are correlated in preparation for re-assembly in accordance with manufacturer's drawings/manuals
		062.3.4	New components are inspected to ensure compliance with manufacturer's specifications
		062.3.5	Dimensional inspection is performed with precision measuring devices to ensure compliance with manufacturer's specifications and site requirements
		062.3.6	Components are reassembled for testing in accordance with manufacturer's specifications and site requirements
		062.3.7	Modifications/alterations are undertaken in accordance with manufacturer's specifications and site requirements
		062.3.8	Components are levelled, aligned, coupled and connected in accordance with manufacturer's specifications and site requirements

Elements		Performance criteria	
		062.3.9	Valves are pressure tested, monitored and adjusted if required in accordance with manufacturer's specifications and the work plan
062.4	Replace/install valves	062.4.1	Site is prepared for valve replacement in accordance with the work plan
		062.4.2	Valve is replaced in accordance with the work plan and manufacturer's specifications
		062.4.3	Valve is connected in accordance with the work plan and manufacturer's specifications
		062.4.4	Final job inspection is completed and any permits relinquished in accordance with the work plan
062.5	Complete the work	062.5.1	Work is completed and appropriate personnel notified in accordance with site/enterprise requirements
		062.5.2	Work area is cleared of waste, cleaned, restored and secured in accordance with site/enterprise procedures
		062.5.3	Plant, tools and equipment are maintained and stored in accordance with site/enterprise procedures
		062.5.4	Work completion details are finalised in accordance with site/enterprise procedures

Range statement

Stream: Production Plant

Field: Maintenance

Equivalencies: This unit of competence incorporates units 10.6A and 18.4A of the National Metal and Engineering Industry Competency Standards

Valves may include high and low pressure and temperature valves that are flanged and bolted; dampers and hydro regulating valves; gate; globe; wafer; uni-flow; plug; ball; knife; rotary; piston (ported); diaphragm; non-return; pinch; pressure relief; regulating; isolating; slide dampers; isolating and regulating blade dampers; gas regulating or isolating dampers; hydro turbine guide vanes; and shutters

Precision measuring devices may include inside/outside micrometers, verniers, engineer's rule, dial gauges, depth gauges and feeler gauges

Testing may include pressure testing (hydraulic and vacuum), blue check

Valve may control solutions which may include gases; solids; and fluids and chemicals such as caustic soda, chlorine, ammonia, sulphuric acid, sodium hypochlorite, hydrazine, diethylamine, citric acid, hydrofluoric acid, ammonium molydate, trisodium phosphate, hydrogen, nitrogen, carbon dioxide, water, fly-ash, slurry, compressed air, brine, oil, steam (superheated and saturated), hydrogen, propane and carbon dioxide

Details of maintenance may be clarified by diagnosis and workplace inspection

Maintenance may include repair, inspection, modification, overhaul, lubrication, servicing, test running, sealing, machining, identifying and replacing defective components and valve packing

Valve drives may include electrical, mechanical, pneumatic, hydraulic or manual

Work completion details may include plant and maintenance records, job cards, check sheets, on device labelling updates and reporting and/or documenting equipment defects

Work site environment may be affected by nearby plant or processes, e.g. chemical, heat, dust, noise, gas and oil

Isolations can refer to electrical/mechanical or other associated processes

Evidence guide

Critical aspects of evidence

It is essential that competence is assessed in the critical aspects of: the knowledge and application of relevant sections of occupational, health and safety legislation, statutory legislation, enterprise/site safety procedures and enterprise/site emergency procedures; preparation and planning of work; removal techniques; maintenance techniques and procedures; installation techniques and procedures; completion of work procedures

Context of assessment

Competency Standards should be assessed in the workplace or simulated workplace and under the normal range of workplace conditions.

Assessment of this unit will be supported with documentary evidence, by means of endorsement stating type and application of work.

Knowledge and Skills

A knowledge of:

Valve operating and seating arrangements; hydraulic and pneumatic principles; measuring equipment; glands, seals and gaskets; bearings; occupational health and safety standards; quality assurance/quality control; specialised tools and jigs; levelling and aligning; rigging and lifting equipment; valve materials and components; technical drawings and data; data recording techniques; hand and portable power tools; diagnostic and testing techniques; protective coatings; plant and systems; communication principles

The ability to:

Identify and use precision measuring equipment; manufacture and install seals and gaskets; apply dismantling and assembly techniques; select, manufacture and use specialised tools and jigs; level and align; use and update technical drawings and data; identify and select materials and components; use hand and portable power tools; apply diagnostic and testing techniques and rectify faults; interpret and apply valve operational techniques; apply occupational health and safety procedures; recognise worn/damaged components and parts; apply effective maintenance procedures; apply data analysis techniques and tools; communicate effectively

UTP NEG063 A
Install and Maintain Complex Mechanical Valves

Descriptor: This unit refers to the fault finding, diagnosis, repair and/or overhaul of complex mechanical valves, but excluding associated servo or actuating units

Elements		Performance criteria	
063.1	Plan and prepare for the work	063.1.1	Work requirements are identified from request/work orders or equivalent and clarified/confirmed with appropriate parties or by site inspection
		063.1.2	Occupational health and safety standards, statutory requirements, relevant Australian standards, codes of practice, manufacturer's specifications, environmental requirements and enterprise procedures are identified, applied and monitored throughout the work procedure
		063.1.3	Resources required to satisfy the work plan are identified, obtained and inspected for compliance with the job specifications
		063.1.4	Relevant plans, drawings and texts are selected and interpreted in accordance with the work plan
		063.1.5	Correct size, type and quantity of materials/components are determined, obtained and inspected for compliance with the job specifications
		063.1.6	Work is planned in detail including sequencing and prioritising and considerations made, where appropriate, for the maintenance of plant security and capacity in accordance with system/site requirements
		063.1.7	Co-ordination requirements, including requests for isolations where appropriate, are resolved with others involved, affected or required by the work
		063.1.8	Potential hazards are identified and prevention and/or control measures are selected in accordance with the work plan and site procedures
		063.1.9	Work area is prepared in accordance with work requirements and site procedures

Elements		Performance criteria	
		063.1.10	Where appropriate, the teams and individuals roles and responsibilities within the team are identified and, where required, assist in the provision of the on-the-job training
063.2	Remove valves for maintenance	063.2.1	Required isolations are confirmed where appropriate, in accordance with site requirements
		063.2.2	Valve is disconnected in accordance with the work plan
		063.2.3	Valve is removed in a manner which will assist in replacement in accordance with the work plan.
		063.2.4	Valve is inspected for abnormalities in accordance with the work plan.
063.3	Perform valve maintenance	063.3.1	Maintenance is performed in accordance with manufacturer's specifications and the work plan
		063.3.2	Valve is dismantled, clearly marked for identification and relevant sketches drawn in accordance with the work plan
		063.3.3	Components are correlated in preparation for re-assembly in accordance with manufacturer's drawings/manuals
		063.3.4	New components are inspected to ensure compliance with manufacturer's specifications
		063.3.5	Dimensional inspection is performed with precision measuring devices to ensure compliance with manufacturer's specifications and site requirements
		063.3.6	Components are reassembled for testing in accordance with manufacturer's specifications and site requirements
		063.3.7	Modifications/alterations are undertaken in accordance with manufacturer's specifications and site requirements
		063.3.8	Components are levelled, aligned, coupled and connected in accordance with manufacturer's specifications and site requirements.

Elements		Performance criteria	
		063.3.9	Valves are pressure tested, monitored and adjusted if required in accordance with manufacturer's specifications and the work plan
063.4	Replace/install valves	063.4.1	Site is prepared for valve replacement in accordance with the work plan
		063.4.2	Valve is replaced in accordance with the work plan and manufacturer's specifications
		063.4.3	Valve is connected in accordance with the work plan and manufacturer's specifications
		063.4.4	Final job inspection is completed and any permits relinquished in accordance with the work plan
063.5	Complete the work	063.5.1	Work is completed and appropriate personnel notified in accordance with site/enterprise requirements
		063.5.2	Work area is cleared of waste, cleaned, restored and secured in accordance with site/enterprise procedures
		063.5.3	Plant, tools and equipment are maintained and stored in accordance with site/enterprise procedures
		063.5.4	Work completion details are finalised in accordance with site/enterprise procedures

Range statement

Stream: Production Plant

Field: Maintenance

Equivalencies: This unit of competence incorporates unit 18.4A and 10.6A of the National Metal and Engineering Competency Standard

Complex valves may include double seated pressure and flow control valves, boiler safety valves, and valves whose actuators are an integral part of the valve and so must be part of any maintenance to the valve.

Precision measuring devices may include inside/outside micrometers, verniers, engineer's rule, dial gauges, depth gauges and feeler gauges

Testing may include pressure testing (hydraulic and vacuum), blue check and non-destructive testing

Valve may control solutions which may include gases; solids; and fluids and chemicals such as caustic soda, chlorine, ammonia, sulphuric acid, sodium hypochlorite, hydrazine, diethylamine, citric acid, hydrofluoric acid, ammonium molydate, trisodium phosphate, hydrogen, nitrogen, carbon dioxide, water, fly-ash, slurry, compressed air, brine, oil, steam (superheated and saturated), hydrogen, propane and carbon dioxide

Details of maintenance may be clarified by diagnosis and workplace inspection

Maintenance may include repair, inspection, modification, overhaul, lubrication, servicing, test running, sealing, machining, identifying and replacing defective components and valve packing

Valve drives may include electrical, mechanical, pneumatic, hydraulic or manual

Work completion details may include plant and maintenance records, job cards, check sheets, on device labelling updates and reporting and/or documenting equipment defects

Work site environment may be affected by nearby plant or processes, eg chemical, heat, dust, noise, gas and oil

Isolations can refer to electrical/mechanical or other associated processes

Evidence guide

Critical aspects of evidence

It is essential that competence is assessed in the critical aspects of: the knowledge and application of relevant sections of occupational, health and safety legislation, statutory legislation, enterprise/site safety procedures and enterprise/site emergency procedures; preparation and planning of work; removal techniques; maintenance techniques and procedures; installation techniques and procedures; completion of work procedures

Context of assessment

Competency Standards should be assessed in the workplace or simulated workplace and under the normal range of workplace conditions.

Assessment of this unit will be supported with documentary evidence, by means of endorsement stating type and application of work.

Knowledge and Skills

A knowledge of:

Valve operating and seating arrangements; hydraulic and pneumatic principles; measuring equipment; glands, seals and gaskets; bearings; occupational health and safety standards; quality assurance/quality control; specialised tools and jigs; levelling and aligning; rigging and lifting equipment; valve materials and components; technical drawings and data; data recording techniques; hand and portable power tools; diagnostic and testing techniques; protective coatings; plant and systems; blowdown duration and valve lift; communication principles

The ability to:

Identify and use precision measuring equipment; manufacture and install seals and gaskets; apply dismantling and assembly techniques; select, manufacture and use specialised tools and jigs; level and align; use technical drawings and data; identify and select materials and components; use hand and portable power tools; apply diagnostic and testing techniques and rectify faults; apply protective coatings; interpret and apply valve operational techniques; apply occupational health and safety procedures; recognise worn/damaged components; apply effective maintenance procedures; apply data analysis techniques and tools; communicate effectively

UTP NEG064 A
Install and Maintain Mechanical Pumps

Descriptor: This unit refers to the installation and maintenance of all pumps, compressors and blowers and the installation of which requires no more than basic alignment

Elements		Performance criteria	
064.1	Plan and prepare for the work	064.1.1	Work requirements are identified from request/work orders or equivalent and clarified/confirmed with appropriate parties or by site inspection
		064.1.2	Occupational health and safety standards, statutory requirements, relevant Australian standards, codes of practice, manufacturer's specifications, environmental requirements and enterprise procedures are identified, applied and monitored throughout the work procedure.
		064.1.3	Resources required to satisfy the work plan are identified, obtained and inspected for compliance with the job specifications
		064.1.4	Relevant plans, drawings and texts are selected and interpreted in accordance with the work plan
		064.1.5	Correct size, type and quantity of materials/components are determined, obtained and inspected for compliance with the job specifications
		064.1.6	Work is planned in detail including sequencing and prioritising and considerations made, where appropriate, for the maintenance of plant security and capacity in accordance with system/site requirements
		064.1.7	Co-ordination requirements, including requests for isolations where appropriate, are resolved with others involved, affected or required by the work
		064.1.8	Potential hazards are identified and prevention and/or control measures are selected in accordance with the work plan and site procedures
		064.1.9	Work area is prepared in accordance with work requirements and site procedures

Elements		Performance criteria	
		064.1.10	Where appropriate, the teams and individuals roles and responsibilities within the team are identified and, where required, assist in the provision of on-the-job training
064.2	Remove pumps for maintenance	064.2.1	Required isolations are confirmed where appropriate in accordance with site requirements
		064.2.2	Pump is disconnected in accordance with the work plan
		064.2.3	Pump is removed in a manner which will assist in replacement in accordance with the work plan
		064.2.4	Pump is inspected for abnormalities in accordance with the work plan
064.3	Maintain pumps	064.3.1	Maintenance is performed in accordance with manufacturer's specifications and site procedures
		064.3.2	Pump is dismantled for maintenance in accordance with manufacturer's specifications and site procedures
		064.3.3	Sketches are made, data noted and components marked for identification and/or re-assembly in accordance with job requirements and site procedures
		064.3.4	New components are obtained and inspected for compliance with manufacturer's specifications
		064.3.5	Dimensional inspection is performed with precision measuring devices to ensure compliance with specifications and results recorded in accordance with job requirements and site procedures
		064.3.6	Pump is reassembled applying appropriate principles and techniques in accordance with manufacturer's specifications and site requirements
		064.3.7	Modifications/alterations are undertaken in accordance with site requirements

Elements		Performance criteria	
064.4	Replace/install pumps	064.4.1	Site is prepared for pump replacement in accordance with the work plan
		064.4.2	Pump is replaced in accordance with the work plan and manufacturer's specifications
		064.4.3	Pump is levelled, aligned, coupled and connected in accordance with the work plan
		064.4.4	All fastenings are torqued in accordance with manufacturer's specifications and site requirements
		064.4.5	Machinery/plant and pump are test run, monitored and adjusted as required in accordance with manufacturer's specifications and site requirements
064.5	Complete the work	064.5.1	Work is completed and appropriate personnel notified in accordance with site/enterprise requirements
		064.5.2	Work area is cleared of waste, cleaned, restored and secured in accordance with site/enterprise procedures
		064.5.3	Plant, tools and equipment are maintained and stored in accordance with site/enterprise procedures
		064.5.4	Work completion details are finalised in accordance with site/enterprise procedures

Range Statement

Stream: Production Plant

Field: Maintenance

Equivalencies: This unit of competence incorporates unit 10.6a and 18.4a of the National Metal and Engineering Industry Competency Standards

Pumps may include single stage, centrifugal, screw and gear, positive, non-positive, partial and variable displacement, vane, diaphragm, roots and pistons

Pump drives may include electrical, internal combustion, hydraulic, pneumatic or steam

Tools may include micrometers, verniers, dial test indicators, slip gauges, hand tools, hydraulic spanners, customised mandrels, digital height gauges, internal micrometers, depth gauges, air grinders, jigs and fixtures, customised spanners, thermal blankets, induction heaters, thermal crayons, digital thermometers, oxyacetylene gear and appropriate lifting devices

Details of maintenance may be clarified by diagnosis and workplace inspection

Maintenance can include repair, inspection, modification, lubrication, servicing, test running, identifying and replacing defective components

Plant and equipment may include jigs for dismantling and oxyacetylene heating equipment

Materials may include liquid nitrogen

Work completion details may include plant and maintenance records, job cards, check sheets, on device labelling updates and reporting and/or documenting equipment defects

Work site environment may be affected by nearby plant or processes e.g. chemical, heat, dust, noise and oil

Isolations can refer to electrical/mechanical or other associated processes

Evidence Guide

Critical aspects of evidence

The knowledge and application of relevant sections of: Occupational, health and safety legislation; Statutory legislation; Enterprise/site safety procedures; Enterprise/site emergency procedures

Preparation and planning of work

Removal techniques

Maintenance techniques and procedures

Installation techniques and procedures

Completion of work procedures

Context of assessment

Competency Standards should be assessed in the workplace or simulated workplace and under the normal range of workplace conditions

Assessment of this unit will be supported with documentary evidence, by means of endorsement stating type and application of work

Interdependent assessment of unit

Nil

Knowledge and Skills

A knowledge of:

Pumps and compressors; Measuring equipment; Seals and gaskets; Bearings; Occupational health and safety standards; Quality assurance/quality control; Specialised tools and jigs; Levelling and alignment; Rigging and lifting equipment; Materials and components of pumps; Fluid dynamics; Torque techniques; Technical drawings and data; Data recording techniques; Hand and portable power tools; Diagnostic and testing techniques; Protective coatings; Heating techniques; Defined tolerances and fits; Balancing techniques; Isolation procedures; Communication principles

The ability to:

Identify and use precision measuring equipment; Manufacture and install seals and gaskets; Apply fluid dynamics principles; Install bearings; Use specialised tools and jigs; Level and align; Use technical drawings and data; Identify and select materials and components; Apply data analysis techniques and tools; Use hand and portable power tools; Apply diagnostic and testing techniques; Use heat application equipment; Apply dismantling and reassembling techniques; Work to defined tolerances; Apply occupational health and safety procedures; Recognise worn/damaged components; Apply effective maintenance procedures; Communicate effectively.

UTP NEG065 A
Install and Maintain Complex Mechanical Pumps

Descriptor: This unit refers to the installation and maintenance of multistage centrifugal pumps, axial flow compressors, fans and blowers

Elements		Performance criteria	
065.1	Plan and prepare for the work	065.1.1	Work requirements are identified from request/work orders or equivalent and clarified/confirmed with appropriate parties or by site inspection
		065.1.2	Occupational health and safety standards, statutory requirements, relevant Australian standards, codes of practice, manufacturer's specifications, environmental requirements and enterprise procedures are identified, applied and monitored throughout the work procedure
		065.1.3	Resources required to satisfy the work plan are identified, obtained and inspected for compliance with the job specifications
		065.1.4	Relevant plans, drawings and texts are selected and interpreted in accordance with the work plan
		065.1.5	Correct size, type and quantity of materials/components are determined, obtained and inspected for compliance with the job specifications
		065.1.6	Work is planned in detail including sequencing and prioritising and considerations made, where appropriate, for the maintenance of plant security and capacity in accordance with system/site requirements
		065.1.7	Co-ordination requirements, including requests for isolations where appropriate, are resolved with others involved, affected or required by the work
		065.1.8	Potential hazards are identified and prevention and/or control measures are selected in accordance with the work plan and site procedures
		065.1.9	Work area is prepared in accordance with work requirements and site procedures

Elements		Performance criteria	
		065.1.10	Where appropriate, the teams and individuals roles and responsibilities within the team are identified and, where required, assist in the provision of on-the-job training
065.2	Remove pumps for maintenance	065.2.1	Required isolations are confirmed, where appropriate, in accordance with site requirements
		065.2.2	Pump is disconnected in accordance with the work plan
		065.2.3	Pump is removed in a manner which will assist in replacement in accordance with the work plan
		065.2.4	Pump is inspected for abnormalities in accordance with the work plan
065.3	Maintain pumps	065.3.1	Maintenance is performed in accordance with manufacturer's specifications and site procedures
		065.3.2	Pump is dismantled for maintenance in accordance with manufacturer's specifications and site procedures
		065.3.3	Sketches are made, data noted and components marked for identification and/or re-assembly in accordance with job requirements and site procedures
		065.3.4	New components are obtained and inspected for compliance with manufacturer's specifications
		065.3.5	Dimensional inspection is performed with precision measuring devices to ensure compliance with specifications and results recorded in accordance with job requirements and site procedures
		065.3.6	Pump is reassembled applying appropriate principles and techniques in accordance with manufacturer's specifications and site requirements
		065.3.7	Modifications/alterations are undertaken in accordance with site requirements

Elements		Performance criteria	
065.4	Replace/install pumps	065.4.1	Site is prepared for pump replacement in accordance with the work plan
		065.4.2	Pump is replaced in accordance with the work plan and manufacturer's specifications
		065.4.3	Pump is levelled, aligned, coupled and connected in accordance with the work plan
		065.4.4	All fastening are torqued in accordance with manufacturer's specifications and site requirements
		065.4.5	Machinery/plant and pump are test run, monitored and adjusted as required in accordance with manufacturer's specifications and site requirements
065.5	Complete the work	065.5.1	Work is completed and appropriate personnel notified in accordance with site/enterprise requirements
		065.5.2	Work area is cleared of waste, cleaned, restored and secured in accordance with site/enterprise procedures
		065.5.3	Plant, tools and equipment are maintained and stored in accordance with site/enterprise procedures
		065.5.4	Work completion details are finalised in accordance with site/enterprise procedures

Range Statement

Stream: Production Plant

Field: Maintenance

Equivalencies: This unit of competence incorporates unit 10.6a and 18.4a of the National Metal and Engineering Industry Competency Standards

Complex pumps may include multistage boiler feed pumps and circulation pumps, gas turbine compressors, multistage hydrogen compressors

Pump drives may include electrical, internal combustion, hydraulic, pneumatic or steam

Tools may include micrometers, verniers, dial test indicators, slip gauges, hand tools, hydraulic spanners, customised mandrels, digital height gauges, internal micrometers, depth gauges, air grinders, jigs and fixtures, customised spanners, thermal blankets, induction heaters, thermal crayons, digital thermometers, oxyacetylene gear and appropriate lifting devices

Details of maintenance may be clarified by diagnosis and workplace inspection

Maintenance can include repair, inspection, modification, lubrication, servicing, test running, identifying and replacing defective components

Plant and equipment may include jigs for dismantling and oxyacetylene heating equipment

Materials may include liquid nitrogen

Work completion details may include plant and maintenance records, job cards, check sheets, on device labelling updates and reporting and/or documenting equipment defects

Work site environment may be affected by nearby plant or processes e.g. chemical, heat, dust, noise and oil

Isolations can refer to electrical/mechanical or other associated processes

Evidence Guide

Critical aspects of evidence

The knowledge and application of relevant sections of: Occupational, health and safety legislation; Statutory legislation; Enterprise/site safety procedures; Enterprise/site emergency procedures

Preparation and planning of work

Removal techniques

Maintenance techniques and procedures

Installation techniques and procedures

Completion of work procedures

Context of assessment

Competency Standards should be assessed in the workplace or simulated workplace and under the normal range of workplace conditions

Assessment of this unit will be supported with documentary evidence, by means of endorsement stating type and application of work

Interdependent assessment of unit

Nil

Knowledge and Skills

A knowledge of:

Pumps and compressors; Precision measuring equipment; Seals and gaskets; Bearings (anti-friction) ; White metal and tilting pad bearings; Occupational health and safety standards; Quality assurance/quality control; Specialised tools and jigs; Advanced balancing, levelling and alignment techniques; Rigging and lifting equipment; Materials and components of pumps; Fluid dynamics; Torque techniques; Technical drawings and data; Data recording techniques; Hand and portable power tools; Diagnostic and testing techniques; Protective coatings; Heating techniques; Defined tolerances and fits; Isolation procedures; Insulation materials; Complex/multistage pumps, compressors; Communication principles

The ability to:

Identify and use precision measuring equipment; Manufacture and install seals and gaskets; Apply fluid dynamics principles; Install bearings (anti-friction and plain); Use specialised tools and jigs; Apply advanced level and alignment techniques; Use technical drawings and data; Identify and select materials and components; Apply data analysis techniques; Identify and apply correct torque techniques; Use hand and portable hand tools; Apply diagnostic and testing techniques; Use heat application equipment; Apply dismantling and reassembling techniques; Work to defined tolerances; Apply occupational health and safety procedures; Recognise worn/damaged components; Apply effective maintenance procedures; Install white metal and tilting pad bearings; Communicate effectively.

UTP NEG066 A
Install and Maintain Industrial Fans

Descriptor: This unit refers to all work required to maintain/overhaul industrial fans and may involve fault finding, diagnosis, repair and could require the removal and replacement of rotating elements with modulating controls

Elements		Performance criteria	
066.1	Plan and prepare for the work	066.1.1	Work requirements are identified from request/work orders or equivalent and clarified/confirmed with appropriate parties or by site inspection
		066.1.2	Occupational health and safety standards, statutory requirements, relevant Australian standards, codes of practice, manufacturer's specifications, environmental requirements and enterprise procedures are identified, applied and monitored throughout the work procedure
		066.1.3	Resources required to satisfy the work plan are identified, obtained and inspected for compliance with the job specifications
		066.1.4	Relevant plans, drawings and texts are selected and interpreted in accordance with the work plan
		066.1.5	Correct size, type and quantity of materials/components are determined, obtained and inspected for compliance with the job specifications
		066.1.6	Work is planned in detail including sequencing and prioritising and considerations made, where appropriate, for the maintenance of plant security and capacity in accordance with system/site requirements
		066.1.7	Co-ordination requirements, including requests for isolations where appropriate, are resolved with others involved, affected or required by the work

Elements		Performance criteria	
		066.1.8	Potential hazards are identified and prevention and/or control measures are selected in accordance with the work plan and site procedures
		066.1.9	Work area is prepared in accordance with work requirements and site procedures
		066.1.10	Where appropriate, the teams and individuals roles and responsibilities within the team are identified and where required, assist in the provision of on-the-job training
066.2	Remove fan for maintenance	066.2.1	Required isolations are confirmed, where appropriate, in accordance with site requirements
		066.2.2	Fans are disconnected in accordance with the work plan
		066.2.3	Fans are removed in a manner which will assist in replacement in accordance with the work plan
		066.2.4	Fans are inspected for abnormalities in accordance with the work plan
066.3	Maintain fans	066.3.1	Maintenance is performed in accordance with manufacturer's specification and site procedures
		066.3.2	Components are disassembled/assembled and preliminary balance of the equipment is obtained, maintained and adjusted by assembling components of an appropriate weight in accordance with manufacturer's/site specifications
		066.3.3	Sketches are made, data noted and components marked for identification and/or re-assembly in accordance with job requirements and site procedures
		066.3.4	New components are obtained and inspected for compliance with manufacturer's specifications

Elements		Performance criteria	
		066.3.5	Dimensional inspection is performed with precision measuring devices to ensure compliance with specifications and results recorded in accordance with job requirements and site procedures
		066.3.6	Fans are reassembled applying appropriate principles and techniques in accordance with manufacturer's specifications and site requirements
		066.3.7	Modifications/alterations are undertaken in accordance with site requirements
066.4	Replace/install fans	066.4.1	Site is prepared for fans replacement in accordance with the work plan
		066.4.2	Fans are replaced in accordance with the work plan and manufacturer's specifications
		066.4.3	Fans are levelled, aligned, coupled and connected in accordance with the work plan
		066.4.4	All fastenings are torqued in accordance with manufacturer's specifications and site requirements
		066.4.5	Machinery/plant and fans are test run, monitored and adjusted as required in accordance with manufacturer's specifications and site requirements
066.5	Complete the work	066.5.1	Work is completed and appropriate personnel notified in accordance with site/enterprise requirements
		066.5.2	Work area is cleared of waste, cleaned, restored and secured in accordance with site/enterprise procedures
		066.5.3	Plant, tools and equipment are maintained and stored in accordance with site/enterprise procedures
		066.5.4	Work completion details are finalised in accordance with site/enterprise procedures

Range Statement

Stream: Production Plant

Field: Maintenance

Equivalencies: This unit of competence incorporates unit 10.6a and 18.4a of the National Metal and Engineering Industry Competency Standards

Fans may include induced draft, forced draft, cooling and exhaust

Modulating controls may be to guide vanes and impellor blades

Maintenance may include repair, inspection, modification, balancing, overhaul, lubrication, servicing, test running and identifying and replacing defective components

Tools may include micrometers, verniers, dial test indicators, slip gauges, hand tools, hydraulic spanners, customised mandrels, digital height gauges, internal micrometers, depth gauges, air grinders, jigs and fixtures, customised spanners, thermal blankets, induction heaters, thermal crayons, digital thermometers, oxyacetylene gear and appropriate lifting devices

Work completion details may include plant and maintenance records, job cards, check sheets, on device labelling updates and reporting and/or documenting equipment defects

Work site environment may be affected by nearby plant or processes, e.g. chemical, heat, dust, noise, gas and oil

Isolations can refer to electrical/mechanical or other associated processes

Evidence Guide

Critical aspects of evidence

The knowledge and application of relevant sections of: Occupational, health and safety legislation; Statutory legislation; Enterprise/site safety procedures; Enterprise/site emergency procedures

Preparation and planning of work

Removal techniques

Maintenance techniques and procedures

Installation techniques and procedures

Completion of work procedures

Context of assessment

Competency Standards should be assessed in the workplace or simulated workplace and under the normal range of workplace conditions

Assessment of this unit will be supported with documentary evidence, by means of endorsement stating type and application of work

Interdependent assessment of unit

Nil

Knowledge and Skills

A knowledge of:

Precision measuring equipment; Seals and gaskets; Bearings (anti-friction and plain); Bearings (white metal and tilting pad); Occupational health and safety standards; Quality assurance/quality control; Specialised tools and jigs; Levelling and alignment; Rigging and lifting; Materials and components; Torque techniques; Technical drawings and data; Data recording techniques; Hand and power tools; Diagnostic and testing techniques; Protective coatings; Plant and systems; Heating and heat treatment techniques; Defined tolerances and fits; Balancing techniques; Isolation procedures; Communication principles

The ability to:

Identify and use measuring equipment; Manufacture and install seals and gaskets; Install bearings (anti-friction and plain); Install bearings (white metal and/or tilting pad); Apply levelling and aligning techniques; Use technical drawings and data; Identify and select materials and components; Apply data analysis techniques; Identify and apply correct torque techniques; Use hand and portable power tools; Apply diagnostic and testing techniques; Use heat application equipment; Work to defined tolerances; Dismantle and assemble components; Apply balancing procedures; Apply maintenance and installation procedures; Apply occupational health and safety procedures; Recognise worn/damaged components; Communicate effectively.

UTP NEG067 A
Install and Maintain Industrial Transmissions

Descriptor: This unit refers to all work associated with the installation and maintenance of industrial transmissions and may involve fault finding, diagnosis and repairs

Elements		Performance criteria	
067.1	Plan and prepare for the work	067.1.1	Work requirements are identified from request/work orders or equivalent and clarified/confirmed with appropriate parties or by site inspection
		067.1.2	Occupational health and safety standards, statutory requirements, relevant Australian standards, codes of practice, manufacturers' specifications, environmental requirements and enterprise procedures are identified, applied and monitored throughout the work procedure
		067.1.3	Resources required to satisfy the work plan are identified, obtained and inspected for compliance with the job specifications
		067.1.4	Relevant plans, drawings and texts are selected and interpreted in accordance with the work plan
		067.1.5	Correct size, type and quantity of materials/components are determined, obtained and inspected for compliance with the job specifications
		067.1.6	Work is planned in detail including sequencing and prioritising and considerations made, where appropriate, for the maintenance of plant security and capacity in accordance with system/site requirements
		067.1.7	Co-ordination requirements, including requests for isolations where appropriate, are resolved with others involved, affected or required by the work.
		067.1.8	Potential hazards are identified and prevention and/or control measures are selected in accordance with the work plan and site procedures
		067.1.9	Work area is prepared in accordance with work requirements and site procedures

Elements		Performance criteria	
		067.1.10	Where appropriate, the teams and individuals roles and responsibilities within the team are identified and, where required, assist in the provision of on-the-job training
067.2	Remove transmissions / plant for maintenance	067.2.1	Required isolations are confirmed where appropriate in accordance with site requirements
		067.2.2	Transmission/plant is disconnected in accordance with the work plan
		067.2.3	Transmission/plant is removed in a manner which will assist in replacement in accordance with the work plan
		067.2.4	Transmission/plant is inspected for abnormalities in accordance with the work plan
067.3	Maintain industrial transmission	067.3.1	Maintenance is performed in accordance with manufacturers specifications and site procedures
		067.3.2	Mechanical drive/transmission assembly is dismantled using appropriate engineering principles and technical procedures in accordance with the job plan and site requirements
		067.3.3	Component parts are clearly marked, and sketches produced as required, for identification in accordance with the job plan and site requirements
		067.3.4	Component wear and clearances are determined using precise measuring techniques and appropriate test equipment in accordance with manufacturer's specifications and site requirements
		067.3.5	Components found to be faulty are repaired, replaced and/or adjusted to conform with manufacturer's specifications and site requirements
		067.3.6	New components are inspected for compliance to required specifications and prepared for re-assembly in accordance with manufacturer's specifications/site requirements

Elements		Performance criteria	
		067.3.7	Component parts are refitted to mechanical drive/transmission assembly in accordance with manufacturer's specifications/site requirements
		067.3.8	Modifications/alterations are undertaken in accordance with site requirements
067.4	Replace/install transmission	067.4.1	Site is prepared for transmission replacement in accordance with the work plan
		067.4.2	Transmission is replaced in accordance with the work plan and manufacturer's specifications
		067.4.3	Transmission is levelled, aligned, coupled and connected in accordance with the work plan.
		067.4.4	All fastenings are torqued in accordance with manufacturer's specifications and site requirements
		067.4.5	Machinery/plant and transmission are test run, monitored and adjusted as required in accordance with manufacturer's specifications and site requirements
067.5	Complete the work	067.5.1	Work is completed and appropriate personnel notified in accordance with site/enterprise requirements
		067.5.2	Work area is cleared of waste, cleaned, restored and secured in accordance with site/enterprise procedures
		067.5.3	Plant, tools and equipment are maintained and stored in accordance with site/enterprise procedures
		067.5.4	Work completion details are finalised in accordance with site/enterprise procedures

Range Statement

Stream: Production Plant

Field: Maintenance

Equivalencies: This unit of competence incorporates units 10.6a and 18.7a of the National Metal and Engineering Competency Standards

Transmissions may include gear drives, fluid drives, gear boxes and variable speed drives

Drive devices may include worm and worm wheel, line shafts, plummet blocks, pulleys, sprockets, belts, taper bush assemblies, roller chains, chain drives, mechanical and hydraulic couplings, compression couplings, disc type flexible couplings, spider type, flexible couplings, chain couplings, universal joints, bevel gearing, rack and pinion gearing, dog toothed clutched, cone type clutches, expanding shoe type clutches, friction plate type clutches, centrifugal clutches, toggle action linkages, magnetic clutches, sprag clutches, band type brakes and other associated drive components

Test equipment may include feeler gauge, dial gauge, bearing blue, micrometers, flexi gauge, leads and go/no-go gauges

Tools and equipment may include micrometers, verniers, dial test indicators, slip gauges, hand tools, customised mandrels, digital height gauges, internal micrometers, oxyacetylene gear, depth gauges, air grinders, jigs and fixtures, customised spanners, electronic internal micrometers, appropriate lifting devices, heated oil bath and induction heaters

Details of maintenance may be clarified by diagnosis and work place inspection

Maintenance may include, repair, inspection, modification, overhaul, lubrication, servicing and test running

Work completion details may include plant and maintenance records, job cards, check sheets, on device labelling updates and reporting and/or documenting equipment defects

Work site environment may be affected by nearby plant or processes, e.g. chemical, heat, dust, noise, gas and oil

Reconnection of transmission may require advanced levelling and alignment

Isolations can refer to electrical/mechanical or other associated processes

Evidence Guide

Critical aspects of evidence

The knowledge and application of relevant sections of: Occupational, health and safety legislation; Statutory legislation; Enterprise/site safety procedures; Enterprise/site emergency procedures

Preparation and planning of work

Removal techniques

Maintenance techniques and procedures

Installation techniques and procedures

Completion of work procedures

Context of assessment

Competency Standards should be assessed in the workplace or simulated workplace and under the normal range of workplace conditions

Assessment of this unit will be supported with documentary evidence, by means of endorsement stating type and application of work

Interdependent assessment of unit

Nil

Knowledge and Skills

A knowledge of:

Occupational health and safety; Gearing and power transmission principles; Precision measuring equipment; Seals and gaskets; Bearings (anti-friction and plain); Quality assurance/quality control; Specialised tools and jigs; Advanced levelling and alignment; Rigging and lifting; Relevant materials and components; Technical drawings and data; Data recording techniques; Hand and portable power tools; Diagnostic and testing techniques; Relevant plant and systems; Isolation procedures ; Heating techniques; Communication principles

The ability to:

Apply occupational health and safety standards; Identify and use measuring equipment; Apply gear and power transmission principles; Manufacture and install seals and gaskets; Install bearings (anti-friction and plain); Apply levelling and alignment techniques; Use technical drawings and data; Identify and select materials and components; Apply data analysis techniques; Use hand and portable power tools; Apply diagnostic and testing techniques; Apply dismantling and reassembling techniques; Apply installation and maintenance procedures; Recognise worn/damaged components; Communicate effectively.

UTP NEG068 A
Install and Maintain Fluid Power Systems

Descriptor: This unit refers to the fault finding, diagnosis, repair and/or maintenance of fluid power systems and components on stationary/mobile equipment

Elements		Performance criteria	
068.1	Plan and prepare for the work	068.1.1	Work requirements are identified from request/work orders or equivalent and clarified/confirmed with appropriate parties or by site inspection
		068.1.2	Occupational health and safety standards, statutory requirements, relevant Australian standards, codes of practice, manufacturers' specifications, environmental requirements and enterprise procedures are identified, applied and monitored throughout the work procedure
		068.1.3	Resources required to satisfy the work plan are identified, obtained and inspected for compliance with the job specifications
		068.1.4	Relevant plans, drawings and texts are selected and interpreted in accordance with the work plan
		068.1.5	Correct size, type and quantity of materials/components are determined, obtained and inspected for compliance with the job specifications
		068.1.6	Work is planned in detail including sequencing and prioritising and considerations made, where appropriate, for the maintenance of plant security and capacity in accordance with system/site requirements
		068.1.7	Co-ordination requirements, including requests for isolations where appropriate, are resolved with others involved, affected or required by the work
		068.1.8	Potential hazards are identified and prevention and/or control measures are selected in accordance with the work plan and site procedures
		068.1.9	Work area is prepared in accordance with work requirements and site procedures

Elements		Performance criteria	
		068.1.10	Where appropriate, the teams and individuals roles and responsibilities within the team are identified and, where required, assist in the provision of on-the-job training
068.2	Remove assemblies or sub-assemblies from plant	068.2.1	Required isolations are confirmed where appropriate in accordance with site requirements
		068.2.2	Fluid power systems are disconnected in accordance with the work plan
		068.2.3	Assemblies or sub-assemblies are removed in a manner which will assist in replacement in accordance with the work plan
		068.2.4	Assemblies or sub-assemblies are inspected for abnormalities in accordance with the work plan
068.3	Maintain fluid power systems	068.3.1	System components, assemblies or sub-assemblies are identified and prepared for maintenance in accordance with the work plan
		068.3.2	Visual inspections and testing are carried out applying hydraulic and pneumatic principles in accordance with the work plan
		068.3.3	Maintenance is performed in accordance with manufacturer's specifications and site requirements
		068.3.4	Components or sub-assemblies are dismantled, cleaned and examined to verify tolerances using appropriate techniques and procedures to determine replacement, overhaul, or repair in accordance with the work plan
		068.3.5	Dimensional inspection is performed with precision measuring devices to ensure compliance with specifications and results recorded in accordance with the work plan
		068.3.6	Faulty items are identified, repaired/overhauled using appropriate techniques and standards in accordance with the work plan

Elements		Performance criteria	
		068.3.7	Replacement items are selected, inspected and prepared for installation in accordance with manufacturer's specifications and the work plan
		068.3.8	Alterations/corrections are undertaken with approval of appropriate authority and in accordance with enterprise procedures
		068.3.9	Routine modifications/alterations are undertaken in accordance with requirements and/or enterprise procedures
		068.3.10	Components or sub-assemblies are refitted in accordance with manufacturer's specifications and the work plan
068.4	Replace assemblies or sub-assemblies	068.4.1	Site is prepared for fluid power system replacement in accordance with the work plan
		068.4.2	Fluid power system is replaced in accordance with the work plan and manufacturer's specifications
		068.4.3	Fluid power system is aligned and connected in accordance with the work plan
		068.4.4	All connections are leak/pressure tested in accordance with manufacturer's specifications and site requirements
		068.4.5	Machinery/plant and fluid power system is test run, monitored and adjusted as required in accordance with manufacturer's specifications and site requirements
		068.4.6	Alterations/corrections are undertaken with approval of appropriate authority and in accordance with enterprise procedures
		068.4.7	Routine modifications/alterations are undertaken in accordance with requirements and/or enterprise procedures
068.5	Complete the work	068.5.1	Work is completed and appropriate personnel notified in accordance with site/enterprise requirements
		068.5.2	Work area is cleared of waste, cleaned, restored and secured in accordance with site/enterprise procedures

Elements	Performance criteria	
	068.5.3	Plant, tools and equipment are maintained and stored in accordance with site/enterprise procedures
	068.5.4	Work completion details are finalised in accordance with site/enterprise procedures

Range Statement

Stream: Production Plant

Field: Maintenance

Equivalencies: This unit of competency incorporates units 10.6a, 11.18a, 18.19a, 18.20a and 18.21a of the National Metal and Engineering Competency Standards

Fluid power systems may include turbine control oil, multiloop pneumatic control

Pneumatic components may include actuators, relays, rams, tools and compressors

Hydraulic and pneumatic principles may include both small signal control and power systems

Measuring tools may include micrometers, dial test indicators, slip gauges, surface plate, depth gauges and verniers

Details of maintenance may be clarified by diagnosis, work place inspection and consultation with other parties/operators

Maintenance may include repair, inspection, modification, overhaul, lubrication, servicing and test running

Work completion details may include plant and maintenance records, job cards, check sheets, on device labelling updates and reporting and/or documenting equipment defects

Work site environment may be affected by nearby plant or processes, e.g. chemical, heat, dust, noise, gas and oil

Isolations can refer to electrical/mechanical or other associated processes

Evidence Guide

Critical aspects of evidence

The knowledge and application of relevant sections of: Occupational, health and safety legislation; Statutory legislation; Enterprise/site safety procedures; Enterprise/site emergency procedures

Preparation and planning of work

Removal techniques

Maintenance techniques and procedures

Installation techniques and procedures

Completion of work procedures

Context of assessment

Competency Standards should be assessed in the workplace or simulated workplace and under the normal range of workplace conditions

Assessment of this unit will be supported with documentary evidence, by means of endorsement stating type and application of work

Interdependent assessment of unit

Nil

Knowledge and Skills

A knowledge of:

Occupational health and safety; Pneumatic equipment/systems; Pumping principles; Properties of liquids and gases; Precision measuring equipment; Seals and gaskets; Valves and porting principles; Quality assurance/quality control; Hydraulic/pneumatic principles; Specialised tools and jigs; Bearings; Balancing, levelling and alignment; Rigging and lifting equipment; Relevant materials and components; Technical drawings and data; Data recording techniques; Hand and portable power tools; Diagnostic and testing techniques; Plant and systems; Design and construction of pipe work; Communication principles

The ability to:

Apply occupational health and safety standards; Identify and use precision measuring equipment; Identify and select tools and materials; Identify and use relevant test equipment; Manufacture and install seals and gaskets; Apply pumping principles; Select and use specialised tools and jigs; Balance, level and align; Use and/or update technical drawings and data; Apply data analysis techniques; Use hand and portable power tools; Apply diagnostic and testing techniques; Apply hydraulic and pneumatic principles; Dismantle and assemble components to specified tolerances; Communicate effectively.

UTP NEG069 A
Install and Maintain Industrial Screens, Strainers and Filters

Descriptor: This unit refers to the fault finding diagnosis, repair and/or overhaul of industrial screens, strainers and filters

Element		Performance criteria	
069.1	Plan and prepare for the work	069.1.1	Work requirements are identified from request/work orders or equivalent and clarified/confirmed with appropriate parties or by site inspection
		069.1.2	Occupational health and safety standards, statutory requirements, relevant Australian standards, codes of practice, manufacturer's specifications, environmental requirements and enterprise procedures are identified, applied and monitored throughout the work procedure
		069.1.3	Resources required to satisfy the work plan are identified, obtained and inspected for compliance with the job specifications
		069.1.4	Relevant plans, drawings and texts are selected and interpreted in accordance with the work plan
		069.1.5	Correct size, type and quantity of materials/components are determined, obtained and inspected for compliance with the job specifications
		069.1.6	Work is planned in detail including sequencing and prioritising and considerations made, where appropriate, for the maintenance of plant security and capacity in accordance with system/site requirements
		069.1.7	Co-ordination requirements, including requests for isolations where appropriate, are resolved with others involved, affected or required by the work. plan
		069.1.8	Potential hazards are identified and prevention and/or control measures are selected in accordance with the work plan and site procedures
		069.1.9	Work area is prepared in accordance with work requirements and site procedures

Element		Performance criteria	
		069.1.10	Where appropriate, the teams and individuals roles and responsibilities within the team are identified and, where required, assist in the provision of on-the-job training
069.2	Remove plant/equipment for maintenance	069.2.1	Required isolations are confirmed where appropriate in accordance with site requirements
		069.2.2	Screens, strainers and filters are disconnected in accordance with the work plan
		069.2.3	Screens, strainers and filters are removed in a manner which will assist in replacement in accordance with the work plan
		069.2.4	Screens, strainers and filters are inspected for abnormalities in accordance with the work plan
069.3	Maintain plant/equipment	069.3.1	Equipment isolation and de-pressurisation is confirmed visually and manually, as required in accordance with the job plan and site requirements
		069.3.2	Plant/equipment components, assemblies or sub-assemblies are identified and prepared for maintenance in accordance with the work plan.
		069.3.3	Equipment is removed, cleaned and marked for identification in accordance with the job plan and site requirements
		069.3.4	Faulty items are repaired/overhauled, using appropriate principles, techniques and standards in accordance with the job plan and site requirements
		069.3.5	Replacement items for installation are selected and inspected in accordance with manufacturer's specifications
		069.3.6	Out of specification modifications/alterations approved by appropriate authority and in accordance with requirements
		069.3.7	Component failures are identified and probable causes reported using appropriate techniques and equipment in accordance with the job plan
		069.3.8	Components or sub-assemblies are refitted in accordance with manufacturer's specifications and site requirements

Element		Performance criteria	
		069.3.9	All fastenings are torqued in accordance with manufacturer's specifications and site requirements
069.4	Replace/install screens, strainers and filters	069.4.1	Site is prepared for screens, strainers and filters replacement in accordance with the work plan
		069.4.2	Out of specification modifications/alterations approved by appropriate authority and in accordance with requirements
		069.4.3	Screens, strainers and filters are replaced in accordance with the work plan and manufacturer's specifications
		069.4.4	Screens, strainers and filters are levelled, aligned and coupled in accordance with the work plan
		069.4.5	All fastenings are torqued in accordance with manufacturer's specifications and site requirements
		069.4.6	Machinery/plant is test run, monitored and adjusted as required in accordance with manufacturer's specifications and site requirements
069.5	Complete the work	069.5.1	Work is completed and appropriate personnel notified in accordance with site/enterprise requirements
		069.5.2	Work area is cleared of waste, cleaned, restored and secured in accordance with site/enterprise procedures
		069.5.3	Plant, tools and equipment are maintained and stored in accordance with site/enterprise procedures
		069.5.4	Work completion details are finalised in accordance with site/enterprise procedures

Range Statement

Stream: Production Plant

Field: Maintenance

Equivalencies: This unit of competency incorporates unit 18.6a of the National Metal and Engineering Competency Standards

Screens may include vibratory, rotary, fixed and basket

Strainers may include Basket, rotary and element

Filters may include water trap, lube oil filters, cartridge, element, oil purifiers, paper, resin and sand

Plant may include electrostatic precipitators ; economise hopper; air conditioner; water coolers

Details of maintenance may be clarified by diagnosis and work place inspection

Maintenance may include repair; inspection; modification; overhaul; lubrication; servicing and test running

Work completion details may include plant and maintenance records; job cards; check sheets; on device labelling updates and reporting; documenting equipment defects

Work site environment may be affected by nearby plant or processes eg chemical, heat, dust, noise, gas and oil

Isolations can refer to electrical/mechanical or other associated processes

Evidence Guide

Critical aspects of evidence

It is essential that competence is assessed in the critical aspects of:

The knowledge and application of relevant sections of occupational health and safety legislation, statutory legislation, enterprise/site safety procedures; enterprise/site emergency procedures; preparation and planning of work; removal techniques; maintenance techniques and procedures; installation techniques and procedures; completion of work procedures

Context for assessment

Competency standards should be assessed in the workplace or simulated workplace and under the normal range of workplace conditions.

Assessment of this unit will be supported with documentary evidence, by means of endorsement stating type and applications of work.

Knowledge and skills

A knowledge of:

Occupational health and safety; filters and filtration system; measuring equipment; screen and filter types and materials; quality assurance/quality control; technical drawings and data; data recording techniques; hand and portable power tools; specialised tools and jigs; anode and cathode protection; alignment procedures; rigging and lifting techniques; relevant materials and components; fault finding and diagnostic techniques; appropriate test procedures; plant and system; balancing procedures; communication principles

The ability to:

Apply occupational health and safety standards; identify and use measuring equipment; use hand portable power tools; use technical drawings and data; apply data analysis techniques; install and remove bearings; dismantle and assemble components; apply installation and maintenance procedures; communicate effectively

UTP NEG070 A
Install and Maintain Conveyors and Associated Equipment

Descriptor: This unit refers to the fault finding, diagnosis and repair, adjustments, exchange of rollers and preparations for belt splicing/repairs

Elements		Performance criteria	
070.1	Plan and prepare for the work	070.1.1	Work requirements are identified from request/work orders or equivalent and clarified/confirmed with appropriate parties or by site inspection
		070.1.2	Occupational health and safety standards, statutory requirements, relevant Australian standards, codes of practice, manufacturer's specifications, environmental requirements and enterprise procedures are identified, applied and monitored throughout the work procedure
		070.1.3	Resources including tools and equipment required to satisfy the work plan are identified, obtained and inspected for compliance with the job specifications
		070.1.4	Relevant plans, drawings and texts are selected and interpreted in accordance with the work plan
		070.1.5	Correct size, type and quantity of materials/components are determined, obtained and inspected for compliance with the job specifications
		070.1.6	Work is planned in detail including sequencing and prioritising and considerations made, where appropriate, for the maintenance of plant security and capacity in accordance with system/site requirements
		070.1.7	Co-ordination requirements, including requests for isolations where appropriate, are resolved with others involved, affected or required by the work
		070.1.8	Potential hazards are identified and prevention and/or control measures are selected in accordance with the work plan and site procedures

Elements		Performance criteria	
		070.1.9	Work area is prepared in accordance with work requirements and site procedures
		070.1.10	Where appropriate, the teams and individuals roles and responsibilities within the team are identified and, where required, assist in the provision of on-the-job training
070.2	Remove equipment to facilitate maintenance	070.2.1	Where appropriate, faulty components and parts are identified and required isolations are confirmed where appropriate in accordance with site requirements
		070.2.2	Associated equipment is disconnected in accordance with the work plan
		070.2.3	Associated equipment is removed in a manner which will assist in replacement in accordance with the work plan
		070.2.4	Conveyors and associated equipment are inspected for abnormalities in accordance with the work plan
070.3	Maintain conveyors and/or associated equipment	070.3.1	Belt tensioning equipment is released and secured to facilitate maintenance in accordance with the work plan.
		070.3.2	Sketches are made, data noted and components marked for identification and/or re-assembly in accordance with manufacturer's specifications and the work plan.
		070.3.3	Out of specification modifications /alterations approved in accordance with requirements
		070.3.4	New components are installed and inspected for compliance with job specifications and prepared for re-assembly in accordance with site requirements.
		070.3.5	Dimensional inspection is performed using precision measuring devices to determine compliance with the job plan.

Elements		Performance criteria	
		070.3.6	Machinery/conveyors are levelled, aligned and tensioned in accordance with the job plan and site requirements
070.4	Replace/install conveyors and/or associated equipment	070.4.1	Where appropriate, faulty components and parts are identified and site is prepared for conveyors and associated equipment to be replaced in accordance with the work plan
		070.4.2	Conveyors and associated equipment are replaced in accordance with the work plan and manufacturer's specifications
		070.4.3	Conveyors and associated equipment are levelled, aligned and coupled in accordance with the work plan
		070.4.4	All fastenings are torqued in accordance with manufacturer's specifications and site requirements
		070.4.5	Conveyors and associated equipment are test run, monitored and adjusted as required in accordance with manufacturer's specifications and site requirements
070.5	Complete the work	070.5.1	Work is completed and appropriate personnel notified in accordance with site/enterprise requirements
		070.5.2	Work area is cleared of waste, cleaned, restored and secured in accordance with site/enterprise procedures
		070.5.3	Plant, tools and equipment are maintained and stored in accordance with site/enterprise procedures
		070.5.4	Work completion details are finalised in accordance with site/enterprise procedures

Range Statement

Stream: Production Plant

Field: Maintenance

Equivalencies: This unit of competence incorporates units 18.6a of the National Metal and Engineering Competency Standards

Conveyors may be fixed, shuttle or multi-directional, rubber belts or drag link

Associated plant/components may include rollers, idlers, pulleys, self tracking devices, scrapers, skirting rubbers, chutes, magnetic detectors, wear plates, ploughs, sprays for dust suppression, anti-slip devices, clipping rubber belts and flop gates

Details of maintenance may be clarified by diagnosis or work place inspection

Maintenance may include repair, inspection, modification, overhaul, lubrication, servicing, test running, belt cleaning and roller changes

Work completion details may include plant and maintenance records, job cards, check sheets, on device labelling updates and reporting and/or documenting equipment defects

Work site environment may be affected by nearby plant or processes, e.g. chemical, heat, dust, noise, gas and oil

Isolations can refer to electrical/mechanical or other associated processes

Evidence Guide

Critical aspects of evidence

The knowledge and application of relevant sections of: Occupational, health and safety legislation; Statutory legislation; Enterprise/site safety procedures; Enterprise/site emergency procedures

Preparation and planning of work

Removal techniques

Maintenance techniques and procedures

Installation techniques and procedures

Completion of work procedures

Context of assessment

Competency Standards should be assessed in the workplace or simulated workplace and under the normal range of workplace conditions

Assessment of this unit will be supported with documentary evidence, by means of endorsement stating type and application of work

Interdependent assessment of unit

Nil

Knowledge and Skills

A knowledge of:

Occupational health and safety; Conveyor types and their operating principles; Conveyor tracking principles; Conveyor tensioning techniques; Conveyor operations/systems; Bearings; Precision measuring equipment; Quality assurance/quality control; Technical drawings and data; Data recording techniques; Hand and portable power tools; Specialised tools and jigs; Levelling and alignment principles; Rigging and lifting techniques; Materials and components; Diagnostic and testing techniques; Balancing procedures; Isolation procedures; Communication principles

The ability to:

Apply occupational health and safety standards; Identify and use measuring equipment; Use hand and portable power tools; Use and/or update technical drawings and data; Apply data analysis techniques and tools; Select and use specialised tools and jibs; Level and align; Identify and select materials and components; Apply diagnostic and testing techniques; Track, align and tension conveyors and associated equipment; Install and remove bearings; Dismantle, exchange and reassemble components and parts; Communicate effectively.

UTP NEG071 A
Install and Maintain Material Feeders

Descriptor: This unit refers to the in-service fault finding, diagnosis and out of service inspection (internal/external), repairs and/or overhaul of material feeders

Elements		Performance criteria	
071.1	Plan and prepare for the work	071.1.1	Work requirements are identified from request/work orders or equivalent and clarified/confirmed with appropriate parties or by site inspection
		071.1.2	Occupational health and safety standards, statutory requirements, relevant Australian standards, codes of practice, manufacturers' specifications, environmental requirements and enterprise procedures are identified, applied and monitored throughout the work procedure
		071.1.3	Resources required to satisfy the work plan are identified, obtained and inspected for compliance with the job specifications
		071.1.4	Relevant plans, drawings and texts are selected and interpreted in accordance with the work plan
		071.1.5	Correct size, type and quantity of materials/components are determined, obtained and inspected for compliance with the job specifications
		071.1.6	Work is planned in detail including sequencing and prioritising and considerations made, where appropriate, for the maintenance of plant security and capacity in accordance with system/site requirements
		071.1.7	Co-ordination requirements, including requests for isolations where appropriate, are resolved with others involved, affected or required by the work
		071.1.8	Potential hazards are identified and prevention and/or control measures are selected in accordance with the work plan and site procedures
		071.1.9	Work area is prepared in accordance with work requirements and site procedures

Elements		Performance criteria	
		071.1.10	Where appropriate, the teams and individuals roles and responsibilities within the team are identified and, where required, assist in the provision of on-the-job training
071.2	Conduct in-service testing	071.2.1	In-service tests are carried out in accordance with the work plan
		071.2.2	Faults are located using appropriate tools, equipment and testing techniques, being mindful of personnel safety and plant integrity
		071.2.3	Testing and fault finding results are analysed to establish suitable repairs or ascertain serviceability
071.3	Remove equipment to facilitate maintenance	071.3.1	Required isolations are confirmed where appropriate in accordance with site requirements
		071.3.2	Material feeders are disconnected in accordance with the work plan
		071.3.3	Material feeders are removed in a manner which will assist in replacement in accordance with the work plan
		071.3.4	Material feeders are inspected for abnormalities in accordance with the work plan
071.4	Maintain material feeders	071.4.1	Maintenance is performed in accordance with manufacturer's specifications and site requirements
		071.4.2	Components or sub-assemblies are dismantled, cleaned and examined to verify tolerances, using correct and appropriate techniques and procedures to determine whether to replace, overhaul or repair in accordance with the work plan
		071.4.3	Equipment is dismantled in a manner that will facilitate re-assembly in accordance with the work plan
		071.4.4	Component parts are clearly marked for identification in accordance with job requirements

Elements		Performance criteria	
		071.4.5	Components are laid out in preparation for re-assembly in accordance with manufacturer's drawings/specifications
		071.4.6	New components are inspected for compliance with manufacturer's specifications and prepared for assembly in accordance with the job plan and site requirements
		071.4.7	Modifications/alterations are undertaken in accordance with site requirements
		071.4.8	Components are reassembled in accordance with work plan and site requirements
071.5	Replace/install feeders	071.5.1	Site is prepared for material feeders to be replaced in accordance with the work plan
		071.5.2	All fastenings are torqued in accordance with manufacturer's specifications and site requirements
		071.5.3	Material feeders are test run and monitored as required in accordance with manufacturer's specifications and site requirements
071.6	Complete the work	071.6.1	Work is completed and appropriate personnel notified in accordance with site/enterprise requirements
		071.6.2	Work area is cleared of waste, cleaned, restored and secured in accordance with site/enterprise procedures
		071.6.3	Plant, tools and equipment are maintained and stored in accordance with site/enterprise procedures
		071.6.4	Work completion details are finalised in accordance with site/enterprise procedures

Range Statement

Stream: Production Plant

Field: Maintenance

Equivalencies: This unit of competence incorporates units 10.6a and 18.4a of the National Metal and Engineering Competency Standards

Feeders may include vibro, apron, rotary, table type and belt type (gravimetric and volumetric)

Feeder processes may involve coal and hot air

Metering techniques may include electro magnetic, elliptical and variable speed

Details of maintenance may be clarified by diagnosis and work place inspection

Maintenance may include repair, inspection, modification, overhaul, lubrication, servicing and test running

Work completion details may include plant and maintenance records, job cards, check sheets, on device labelling updates and reporting and/or documenting equipment defects

Work site environment may be affected by nearby plant or processes, e.g. chemical, heat, dust, noise, gas and oil

Isolations can refer to electrical/mechanical or other associated processes

Evidence Guide

Critical aspects of evidence

The knowledge and application of relevant sections of: Occupational, health and safety legislation; Statutory legislation; Enterprise/site safety procedures; Enterprise/site emergency procedures

Preparation and planning of work

Removal techniques

Maintenance techniques and procedures

Installation techniques and procedures

Completion of work procedures

In service test procedures

Context of assessment

Competency Standards should be assessed in the workplace or simulated workplace and under the normal range of workplace conditions

Assessment of this unit will be supported with documentary evidence, by means of endorsement stating type and application of work

Interdependent assessment of unit

Nil

Knowledge and Skills

A knowledge of:

Occupational health and safety standards; Gearboxes; Seals and gaskets; Bearings (anti-friction and plain); Lubricants; Feeder types and operating principles; Precision measuring equipment; Quality assurance / quality control; Technical drawings and data; Data recording techniques; Hand and power tools; Specialised tools and jigs; Advanced levelling and alignment principles; Rigging and lifting techniques; Relevant materials and components; Diagnostic and testing techniques; Plant and systems; Isolation procedures; Balancing procedures; Communication principles

The ability to:

Apply occupational health and safety standards; Manufacture gaskets and seals; Identify and use precision measuring equipment; Apply feeder operating principles when setting equipment; Use hand and portable power tools; Use technical drawings and data; Apply data analysis techniques; Select and use specialised tools and jigs; Level and align; Identify and select materials and components; Apply diagnostic and testing techniques; Adjust feeder for desired material feed rate; Install and remove bearings; Dismantle and reassemble components; Communicate effectively.

UTP NEG072 A
Install and Maintain Material Crushers

Descriptor: This unit refers to the in-service fault finding, diagnosis and out of service inspection, repairs, and/or overhauls of material crushers and would involve roll/door assemblies

Elements		Performance criteria	
072.1	Plan and prepare for the work	072.1.1	Work requirements are identified from request/work orders or equivalent and clarified/confirmed with appropriate parties or by site inspection
		072.1.2	Occupational health and safety standards, statutory requirements, relevant Australian standards, codes of practice, manufacturer's specifications, environmental requirements and enterprise procedures are identified, applied and monitored throughout the work procedure
		072.1.3	Resources required to satisfy the work plan are identified, obtained and inspected for compliance with the job specifications
		072.1.4	Relevant plans, drawings and texts are selected and interpreted in accordance with the work plan
		072.1.5	Correct size, type and quantity of materials/components are determined, obtained and inspected for compliance with the job specifications
		072.1.6	Work is planned in detail including sequencing and prioritising and considerations made, where appropriate, for the maintenance of plant security and capacity in accordance with system/site requirements
		072.1.7	Co-ordination requirements, including requests for isolations where appropriate, are resolved with others involved, affected or required by the work
		072.1.8	Potential hazards are identified and prevention and/or control measures are selected in accordance with the work plan and site procedures
		072.1.9	Work area is prepared in accordance with work requirements and site procedures

Elements		Performance criteria	
		072.1.10	Where appropriate, the teams and individuals roles and responsibilities within the team are identified and, where required, assist in the provision of on-the-job training
072.2	Conduct in-service testing	072.2.1	In-service tests are carried out in accordance with the work plan
		072.2.2	Faults are located using appropriate tools, equipment and testing techniques, being mindful of personnel safety and plant integrity
		072.2.3	Testing and fault finding results are analysed to establish suitable repairs or ascertain serviceability
072.3	Remove equipment to facilitate maintenance	072.3.1	Required isolations are confirmed where appropriate in accordance with site requirements
		072.3.2	Material crushers are disconnected in accordance with the work plan
		072.3.3	Material crushers are removed in a manner which will assist in replacement in accordance with the work plan
		072.3.4	Material crushers are inspected for abnormalities in accordance with the work plan
072.4	Maintain material crushers	072.4.1	Components or sub-assemblies are dismantled, cleaned and examined to verify tolerances using appropriate techniques and procedures to determine the need to replace, overhaul or repair in accordance with the work plan
		072.4.2	Sketches are made, data noted and components marked for identification and/or re-assembly and overhaul in accordance with the work plan and site requirements
		072.4.3	Dimensional inspection is performed using precision measuring devices to determine compliance with relevant drawings/ specifications and in accordance with the work plan

Elements		Performance criteria	
		072.4.4	New components are inspected for compliance with manufacturer's specifications and prepared for assembly in accordance with the work plan and site requirements
		072.4.5	Components are weighed, measured and recorded in accordance with the work plan and site requirements
		072.4.6	Components are reassembled and preliminary balance of the equipment is obtained, maintained and adjusted by assembling components sequentially and of appropriate weight in accordance with the work plan
		072.4.7	Plant and machinery is adjusted using appropriate techniques in accordance with manufacturer's/site tolerances
		072.4.8	All fastenings are torqued in accordance with manufacturer's specifications
		072.4.9	Components are levelled and aligned, using appropriate tools and procedures in accordance with the work plan and site requirements
072.5	Replace/install material crushers	072.5.1	Site is prepared for material crushers to be replaced in accordance with the work plan
		072.5.2	Material crushers are replaced in accordance with the work plan and manufacturer's specifications
		072.5.3	Alterations/corrections are undertaken in accordance with requirements/enterprise procedures
		072.5.4	Material crushers are levelled, aligned and coupled in accordance with the work plan.
		072.5.5	All fastenings are torqued in accordance with manufacturer's specifications and site requirements
		072.5.6	Material crushers are test run and monitored as required in accordance with manufacturer's specifications and site requirements

Elements		Performance criteria	
072.6	Complete the work	072.6.1	Work is completed and appropriate personnel notified in accordance with site/enterprise requirements
		072.6.2	Work area is cleared of waste, cleaned, restored and secured in accordance with site/enterprise procedures
		072.6.3	Plant, tools and equipment are maintained and stored in accordance with site/enterprise procedures
		072.6.4	Work completion details are finalised in accordance with site/enterprise procedures

Range Statement

Stream: Production Plant

Field: Maintenance

Equivalencies: This unit of competence incorporates units 10.6A and 18.4A of the National Metal and Engineering Competency Standards

Crusher types may include impact, ball mills, bowl mills, hammer, jaw crushers, pulverisers, rotary breaker, roller crusher and tines

Details of maintenance may be clarified by diagnosis and work place inspection

Maintenance may include repair, inspection, modification, overhaul, lubrication, servicing and test running

Work completion details may include plant and maintenance records, job cards, check sheets, on device labelling updates and reporting and/or documenting equipment defects

Work site environment may be affected by nearby plant or processes, e.g. chemical, heat, dust, noise, gas and oil

Isolations can refer to electrical/mechanical or other associated processes

Evidence Guide

Critical aspects of evidence

The knowledge and application of relevant sections of: Occupational, health and safety legislation; Statutory legislation; Enterprise/site safety procedures; Enterprise/site emergency procedures

Preparation and planning of work

Removal techniques

Identifying faults

Conducting in service testing

Maintenance techniques and procedures

Installation techniques and procedures

Completion of work procedures

In service test procedures

Context of assessment

Competency Standards should be assessed in the workplace or simulated workplace and under the normal range of workplace conditions

Assessment of this unit will be supported with documentary evidence, by means of endorsement stating type and application of work

Interdependent assessment of unit

Nil

Knowledge and Skills

A knowledge of:

Occupational health and safety; Crusher types and operating principles; Measuring equipment; Quality assurance/quality control; Engineering principles; Technical drawings and data; Data recording techniques; Hand and portable power tools; Specialised tools and jigs; Levelling and alignment principles; Rigging and lifting techniques; Materials and components; Diagnostic and testing techniques; Torquing techniques; Plant and systems; Balancing procedures; Lubrication systems; Communication principles

The ability to:

Apply occupational health and safety procedures; Identify and use measuring equipment; Use hand and portable power tools; Use and draw sketches, technical drawings and data; Apply data analysis techniques; Select and use specialised tools and jigs; Level and align; Work to precise tolerances; Identify and select materials and components; Apply diagnostic and testing techniques; Test, adjust, replace and overhaul crushers for desired material sizing; Install and remove bearings; Dismantle and reassemble components; Communicate effectively.

UTP NEG073 A
Install and Maintain Fuel Transport Equipment

Descriptor: This unit refers to the installation and repair/overhaul of fuel carriage/delivery and associated systems

Elements		Performance criteria	
073.1	Plan and prepare for the work	073.1.1	Work requirements are identified from request/work orders or equivalent and clarified/confirmed with appropriate parties or by site inspection
		073.1.2	Occupational health and safety standards, statutory requirements, relevant Australian standards, codes of practice, manufacturer's specifications, environmental requirements and enterprise procedures are identified, applied and monitored throughout the work procedure
		073.1.3	Resources required to satisfy the work plan are identified, obtained and inspected for compliance with the job specifications
		073.1.4	Relevant plans, drawings and texts are selected and interpreted in accordance with the work plan
		073.1.5	Correct size, type and quantity of materials/components are determined, obtained and inspected for compliance with the job specifications
		073.1.6	Work is planned in detail including sequencing and prioritising and considerations made, where appropriate, for the maintenance of plant security and capacity in accordance with system/site requirements
		073.1.7	Co-ordination requirements, including requests for isolations where appropriate, are resolved with others involved, affected or required by the work
		073.1.8	Potential hazards are identified and prevention and/or control measures are selected in accordance with the work plan and site procedures
		073.1.9	Work area is prepared in accordance with work requirements and site procedures

Elements		Performance criteria	
		073.1.10	Where appropriate, the teams and individuals roles and responsibilities within the team are identified and, where required, assist in the provision of on-the-job training
073.2	Remove systems and associated equipment	073.2.1	Required isolations are confirmed where appropriate in accordance with site requirements
		073.2.2	Fuel transport systems are disconnected in accordance with the work plan
		073.2.3	Fuel transport systems are removed in a manner which will assist in replacement in accordance with the work plan
		073.2.4	Fuel transport systems are inspected for abnormalities in accordance with the work plan
073.3	Maintain fuel delivery systems	073.3.1	Maintenance is performed in accordance with the work place and site procedures
		073.3.2	Equipment is dismantled in a manner that will facilitate re-assembly in accordance with the work plan
		073.3.3	Faulty components are replaced in accordance with the work plan and site requirements
		073.3.4	Equipment is reassembled in accordance with the work plan and site requirements
073.4	Replace systems and associated equipment	073.4.1	Site is prepared for fuel transport systems to be replaced in accordance with the work plan
		073.4.2	Fuel transport systems are replaced in accordance with the work plan and manufacturer's specifications
		073.4.3	Fuel transport systems are test run and monitored as required in accordance with manufacturer's specifications and site requirements
073.5	Complete the work	073.5.1	Work is completed and appropriate personnel notified in accordance with site/enterprise requirements
		073.5.2	Work area is cleared of waste, cleaned, restored and secured in accordance with site/enterprise procedures

Elements	Performance criteria	
	073.5.3	Plant, tools and equipment are maintained and stored in accordance with site/enterprise procedures
	073.5.4	Work completion details are finalised in accordance with site/enterprise procedures

Range Statement

Stream: Production Plant

Field: Maintenance

Equivalencies: This unit of competence incorporates unit 18.55a of the National Metal and Engineering Competency Standards

Fuel delivery systems may include pipe work, riffle boxes, burners and ducting

Associated systems may include products of combustion disposal

Fuel may include pulverised fuel, liquids (heavy and light oil) and gas

Work completion details may include plant and maintenance records, job cards, check sheets, on device labelling updates and reporting and/or documenting equipment defects

Work site environment may be affected by nearby plant or processes, eg. chemical, heat, dust, noise, gas and oil

Isolations can refer to electrical/mechanical or other associated processes

Evidence Guide

Critical aspects of evidence

The knowledge and application of relevant sections of: Occupational, health and safety legislation; Statutory legislation; Enterprise/site safety procedures; Enterprise/site emergency procedures

Preparation and planning of work

Removal techniques

Maintenance techniques and procedures

Installation techniques and procedures

Completion of work procedures

Context of assessment

Competency Standards should be assessed in the workplace or simulated workplace and under the normal range of workplace conditions

Assessment of this unit will be supported with documentary evidence, by means of endorsement stating type and application of work

Interdependent assessment of unit

Nil

Knowledge and Skills

A knowledge of:

Occupational health and safety; Fuel transport systems; Appropriate tools and jigs; Measuring equipment; Engineering principles; Levelling and aligning principles; Rigging and lifting equipment; Relevant materials and components; Quality assurance/quality control; Technical drawings and data; Data recording techniques; Hand and portable power tools; Isolation procedures; Welding equipment; Gaskets and seals; Communication principles ; Pipe bending and development techniques; Support systems (pipe work and duct work)

The ability to:

Apply occupational health and safety standards; Identify and use precision measuring equipment; Use hand and portable power tools; Use technical drawings and data; Select and use appropriate tools and jigs; Level and align; Identify and select relevant materials and components; Select and use gaskets and seals; Dismantle and assemble components; Apply welding techniques; Apply installation and maintenance procedures; Communicate effectively.