



**Australian Government**

# **PMASUP342 Monitor and maintain electrical systems**

**Release: 1**

# PMASUP342 Monitor and maintain electrical systems

## Modification History

Release 1. Supersedes and is equivalent to PMASUP342B Monitor and maintain electrical systems

## Application

This unit of competency covers the skills and knowledge required to monitor and maintain electrical systems and equipment on systems used to carry products.

This unit of competency applies to operations technicians and those in similar roles who are required to test, repair and recommission electrical systems and equipment; issue permits to allow work to be undertaken; verify equipment and system operation; troubleshoot problems; and prepare reports related to the equipment/systems.

This unit of competency applies to a wide range of electrical equipment and systems. Examples include voltage regulators, alternators, generators and motors, battery banks, air conditioning systems, lighting, emergency shutdown systems (ESD), low voltage power systems, communications systems, single wire earth return (SWER) line systems, solar power systems, fire systems and control panels.

This unit of competency applies to an individual working alone or as part of a team or group and working in liaison with other shift team members and the control room operator, as appropriate.

Some jurisdictions may require the holder of this unit to be licensed or certified and users should check with the relevant authorities.

## Pre-requisite Unit

MSMPER300 Issue work permits

## Competency Field

Support

## Unit Sector

## Elements and Performance Criteria

Elements describe the essential outcomes.

Performance criteria describe the performance needed to demonstrate achievement of the element.

- 1 **Monitor equipment operation**
  - 1.1 Monitor equipment operation according to electrical equipment operating principles and parameters
  - 1.2 Access and interpret relevant technical drawings and schematics to determine system faults
  - 1.3 Issue permit to work to allow work to be undertaken
  - 1.4 Verify equipment operation/performance through test procedures to ensure correct operation and seek confirmation of identified problems from other sources
  - 1.5 Correct operational variations through calibration and adjustment
  - 1.6 Document operational variations
  
- 2 **Test/repair equipment**
  - 2.1 Verify equipment is operating correctly and document test results ensuring that statutory electrical testing requirements have been completed
  - 2.2 Apply appropriate troubleshooting techniques to determine the cause of detected operational faults
  - 2.3 Rectify operational faults through the application of relevant maintenance procedures
  - 2.4 Isolate, remove and dispose of faulty equipment, and install new equipment
  - 2.5 Verify installed equipment to ensure it meets required operational parameters and conditions
  - 2.6 Record all repairs/installations to provide historical records of the condition of system equipment
  
- 3 **Recommission systems and equipment**
  - 3.1 Recommission repaired/installed equipment to online operation in the correct sequence at the required operational parameters
  - 3.2 Monitor or activate systems to ensure they are operating both safely and effectively
  - 3.3 Close out permit to work and restore site/system to normal operation

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|---|------------------------------------|-----|--|
| 4 | <b>Compile and analyse reports</b> | 4.1 | Collect information concerning deviations/repaired equipment, and put into accepted reporting format   |
|   |                                    | 4.2 | Compile reports ensuring they provide an accurate and ongoing record of deviations in pipeline processes and a current record of pipeline and equipment trends |
|   |                                    | 4.3 | Utilise information or reports for short and long-term planning in deviation control   |

## Foundation Skills

This section describes those language, literacy, numeracy and employment skills that are essential to performance.

Foundation skills essential to performance are explicit in the performance criteria of this unit of competency.

## Range of Conditions

This field allows for different work environments and conditions that may affect performance. Essential operating conditions that may be present (depending on the work situation, needs of the candidate, accessibility of the item, and local industry and regional contexts) are included.

**Regulatory framework** The latest version of all legislation, regulations, industry codes of practice and Australian/international standards, or the version specified by the local regulatory authority, must be used, and include one or more of the following:

- legislative requirements, including work health and safety (WHS)
- industry codes of practice and guidelines
- environmental regulations and guidelines
- Australian and other standards which may include:
  - *AS 2885 (Set) Pipelines - Gas and liquid petroleum*
  - *AS/NZS 60079 (Set) Explosive atmospheres*
  - *AS/NZS 1768:2007 Lightning protection*
  - *AS/NZS 1596:2014 Storage and handling of LP Gas*
  - *AS 2832.1:2015 Cathodic protection of metals - Pipes and cables*
  - *AS/NZS 3000:2007 Electrical installations (known as the Australian/New Zealand Wiring Rules)*
  - *AS 2239-2003 Galvanic (sacrificial) anodes for cathodic protection*
- utility codes and standards
- licence and certification requirements

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

**Procedures** All operations must be performed in accordance with relevant procedures.

Procedures are written, verbal, visual, computer-based or in some other form, include one or more of the following:

- emergency procedures
- work instructions
- standard operating procedures (SOPs)
- safe work method statements (SWMS)
- formulas/recipes
- batch sheets
- temporary instructions
- any similar instructions provided for the smooth running of the plant

**Test equipment** Test equipment will be selected as required from one or more of the following:

- multimeter
- chart recorders
- data logging equipment
- amp and volt meters
- watt meters
- high voltage testing equipment
- earth leakage test equipment
- electrical inspection tags

## Unit Mapping Information

Release 1. Supersedes and is equivalent to PMASUP342B Monitor and maintain electrical systems

## **Links**

Companion Volume implementation guides are found in VETNet -

<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=9fc2cf53-e570-4e9f-ad6a-b228ffdb6875>