



Australian Government

UEPMNT368 Repair and maintain stationary gas fuelled reciprocating engines

Release: 2

UEPMNT368 Repair and maintain stationary gas fuelled reciprocating engines

Modification History

Release 2. Minor release to update superseded pre-requisite units.

Release 1. This is the first release of this unit of competency in the UEP Generation Training Package.

Application

This unit involves the skills and knowledge required to isolate, disconnect, repair, reconnect and undertake maintenance of stationary gas fuelled reciprocating engines. It does not include repairs to the internal mechanical components of the engine.

Maintenance includes the regular monitoring, inspection and verification of the safe and efficient operation of a power generation facility's stationary gas fuelled reciprocating engine.

Competency in this unit requires the ability to work safely to relevant industry standards when disconnecting, carrying out repairs and replacing fuel train components to given specifications. It also includes reconnecting the engine including pre-start tests, start-up, adjusting components and controls for safe and efficient operation and completing all required documentation. Individuals will, in general, work as a maintenance operative, in a power generation facility.

Power generation maintenance personnel are typically trained and authorised to receive permits to work.

No licensing, legislative or certification requirements apply to this unit at the time of publication.

Note: Workplace practices

The application of the skills and knowledge described in this unit of competency may require a licence or training permit to practice in the workplace, where work is carried out on gas and electrical installations. Additional and/or other conditions may apply under state and territory legislative and regulatory licensing requirements.

Pre-requisite Unit

CPCCWHS1001 Work safely in the construction industry

HLTAID009 Provide cardiopulmonary resuscitation

Competency Field

Maintenance

Unit Sector

Electricity generation

Elements and Performance Criteria

ELEMENTS

Elements describe the essential outcomes.

1 Prepare to repair and maintain gas fuelled reciprocating engines

PERFORMANCE CRITERIA

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

- 1.1** Work, Health and Safety (WHS)/Occupational Health and Safety (OHS) procedures are identified and implemented, in accordance with workplace procedures
- 1.2** Health and safety risks are identified and risk control measures are followed, in accordance with workplace procedures
- 1.3** Safety hazards that have not previously been identified are noted, and risk control measures are implemented and followed, in accordance with workplace procedures
- 1.4** Formal authority to proceed with repair and maintenance work is obtained, in accordance with workplace procedures
- 1.5** Repair and maintenance work is sequenced, in accordance with workplace procedures
- 1.6** Nature and location of repair and maintenance work is determined from documentation, or appropriate personnel, to establish scope of work and assigned roles
- 1.7** Stationary gas fuelled reciprocating engine plant, equipment and component specifications and manufacturers' manuals are obtained
- 1.8** Material needed for repair and maintenance work is obtained, in accordance with workplace procedures and is checked against job requirements
- 1.9** Tools and equipment, including personal protective equipment and testing devices are obtained, in accordance with workplace procedures and are checked for correct operation and safety

2 Repair and maintain gas fuelled reciprocating

- 2.1** Regulatory and code of practice recording and reporting requirements are completed, in accordance with

engines**workplace procedures**

- 2.2** Gas and electrical circuits, machines and/or power generation plant are checked prior to commencement and are recorded as being isolated and safe, in accordance with workplace procedures
- 2.3** Nature and possible cause of stationary gas fuelled reciprocating engine faults, or out of specification performance, are identified from defect reports or operational records
- 2.4** Fault finding using observation, measurement, calculations, comparison with normal system and component parameter values is undertaken
- 2.5** Faults beyond the scope of gas fuel train, ignition or fume exhaust work are identified and arrangements are made for authorised personnel to rectify faults
- 2.6** Stationary gas fuelled reciprocating engine is disconnected, to carry out maintenance and repairs, in accordance with workplace procedures
- 2.7** Components are removed or dismantled, where necessary, and parts are stored to protect them against loss or damage
- 2.8** Faulty components are rechecked and their fault status is reconfirmed
- 2.9** Materials required to rectify faults are obtained, in accordance with workplace procedures
- 2.10** Repair and maintenance work is carried out without waste of materials or damage to apparatus, circuits, the surrounding environment or services, in accordance with workplace procedures and sustainable energy principles and practices
- 2.11** Stationary gas fuelled reciprocating engine repair is tested, in accordance with workplace procedures
- 2.12** Stationary gas fuelled reciprocating engine is reassembled, reconnected and tested to ensure it is operating safely and that it complies with relevant workplace and legislative requirements

3 Complete and report on

- 3.1** Final check of stationary gas fuelled reciprocating engine is made to verify compliance with legislative and

repair and maintenance

certification requirements

- 3.2 Work area is cleared and materials are disposed of or recycled, in accordance with workplace procedures
- 3.3 Tools and equipment are cleaned, checked, serviced and stored, in accordance with manufacturers' recommendations and workplace procedures
- 3.4 Work site is cleaned and made safe, in accordance with workplace procedures
- 3.5 Maintenance and repair work is documented and appropriate personnel are notified, in accordance with workplace procedures

Foundation Skills

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

Range of Conditions

Range is restricted to essential operating conditions and any other variables essential to the work environment.

Non-essential conditions may be found in the Companion Volume Implementation Guide.

Unit Mapping Information

This unit replaces and is equivalent to UEPMT368A Repair and maintain stationary gas fuelled reciprocating engines.

Links

Companion Volume implementation guides are found in VETNet -

<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=1715b9fa-e7bd-441c-bb8d-cf22c9c825a8>

Assessment Requirements for UEPMNT368 Repair and maintain stationary gas fuelled reciprocating engines

Modification History

Release 2. Minor release to update superseded pre-requisite units.

Release 1. This is the first release of this unit of competency in the UEP Generation Training Package.

Performance Evidence

Evidence required to demonstrate competence in this unit must be relevant to and satisfy all the requirements of the elements, performance criteria and range of conditions on at least two separate occasions and includes:

- applying Work, Health and Safety (WHS)/Occupational Health and Safety (OHS) requirements including:
 - emergency procedures
 - hazard identification
 - risk control measures
- communicating with personnel
- determining permit to work requirements
- disconnecting and reconnecting stationary gas fuelled reciprocating engine
- finding and rectifying faults
- preparing to repair and maintain stationary gas fuelled reciprocating engines
- repairing and maintaining stationary gas fuelled reciprocating engines including identifying faults completing and reporting on repair and maintenance work
- safe working practices implementing legislation, industry standards, codes of practice and regulations
- using manufacturers' specifications and manuals
- working with sustainable energy principles and practices

Knowledge Evidence

Evidence required to demonstrate competence in this unit must be relevant to and satisfy all the requirements of the elements, performance criteria and range of conditions and includes knowledge of:

- documentation and report requirements
- fault finding
- gas fuelled reciprocating engines
- gas fuels
- legislation, industry standards, codes of practice and regulations

- manufacturers' specifications and manuals
- permit to work system
- reconnection and disconnection of stationary gas fuelled reciprocating engines
- stationary gas fuelled reciprocating engine repair and maintenance
- sustainable energy principles and practices
- WHS/OHS legislated requirements including:
 - emergency procedures
 - hazard identification
 - risk control measures
 - safe working practices
- workplace documentation
- workplace policies and procedures

Assessment Conditions

As a minimum, assessors must satisfy applicable regulatory requirements, which include requirements in the Standards for Registered Training Organisations current at the time of assessment.

As a minimum, assessment must satisfy applicable regulatory requirements, which include requirements in the Standards for Registered Training Organisations current at the time of assessment.

Assessment processes and techniques must be appropriate to the language, literacy and numeracy requirements of the work being performed and the needs of the candidate.

Assessment must occur in workplace operational situations. Where this is not appropriate, assessment must occur in simulated workplace operational situations that reflect workplace conditions.

Resources for assessment must include access to:

- a range of relevant exercises, case studies and/or other simulations
- relevant and appropriate materials, tools, equipment and personal protective equipment currently used in industry
- applicable documentation including workplace procedures, industry standards, equipment specifications, regulations, codes of practice and operation manuals.

Links

Companion Volume implementation guides are found in VETNet -

<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=1715b9fa-e7bd-441c-bb8d-cf22c9c825a8>