



Australian Government

UEPOPS247 Operate and monitor an internal combustion single fuel reciprocating engine

Release: 1

UEPOPS247 Operate and monitor an internal combustion single fuel reciprocating engine

Modification History

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 operate, inspect and monitor single fuel internal combustion reciprocating engines.

Typically, an internal combustion engine uses fossil fuels such as petrol, gas, diesel or oil. Internal combustion reciprocating engines in the form of combustion turbines drive the largest electric generators.

Competency in this unit requires the ability to plan work, operate internal combustion single fuel reciprocating engine plant, test internal combustion single fuel reciprocating engine plant operations, analyse internal combustion single fuel reciprocating engine plant faults, monitor and inspect internal combustion single fuel reciprocating engine plant and the completion of all documentation. Individuals will, in general, work under supervision, in a power generating facility as an operator.

Power generation plant operators are typically trained and authorised to isolate, prepare plant and issue permits to work.

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

Note: Workplace practice

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

Pre-requisite Unit

There are no prerequisite units.

Competency Field

Operations

Unit Sector

Electricity generation

Elements and Performance Criteria

ELEMENTS

Elements describe the essential outcomes.

PERFORMANCE CRITERIA

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

1 Plan and prepare work

- 1.1 Safety issues related to operating and monitoring internal combustion single fuel reciprocating engines are identified, in accordance with workplace procedures and Work, Health and Safety (WHS)/Occupational Health and Safety (OHS) regulations and legislative requirements
- 1.2 Work requirements are identified, in accordance with workplace procedures, from relevant personnel and documentation
- 1.3 Documentation to determine single fuel reciprocating engine plant status is assessed and evaluated, in accordance with workplace procedures
- 1.4 Inspection and field preparation for single fuel reciprocating engine plant service is carried out, in accordance with workplace procedures and manufacturers' recommendations
- 1.5 Single fuel reciprocating engine plant operational prerequisites are established, in accordance with workplace procedures and manufacturers' recommendations
- 1.6 Sequence for recommissioning of single fuel reciprocating engine plant is determined to suit existing circumstances, in accordance with workplace procedures and site requirements

2 Operate single fuel reciprocating engine plant

- 2.1 Single fuel reciprocating engine plant is operated, in accordance with workplace procedures and manufacturers' operating recommendations
- 2.2 Single fuel reciprocating engine plant is monitored and observed to detect deviations from normal operating conditions, in accordance with workplace procedures

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| | 2.3 | Corrective actions are taken to rectify abnormalities, in accordance with workplace procedures and manufacturers' recommendations |
| 3 Test single fuel reciprocating engine plant operation | 3.1 | Operational tests are performed, in accordance with workplace procedures |
| | 3.2 | Single fuel reciprocating engine plant is observed for correct operational response, in accordance with workplace procedures |
| | 3.3 | Corrective action is taken, in accordance with workplace procedures, when response does not meet with documentation, plant integrity or personnel safety requirements |
| | 3.4 | Appropriate personnel are notified, in accordance with workplace procedures, when defects are detected |
| 4 Analyse single fuel reciprocating engine plant faults | 4.1 | Causes of abnormal single fuel reciprocating engine plant operating conditions are identified, in accordance with workplace procedures, by analysing technical and operational information |
| | 4.2 | Corrective action is taken, in accordance with workplace procedures |
| | 4.3 | Single fuel reciprocating engine plant integrity and personnel safety is maintained, in accordance with workplace procedures, and in consultation with appropriate personnel and technical and operational documentation |
| 5 Monitor and inspect single fuel reciprocating engine plant | 5.1 | Single fuel reciprocating engine plant to be monitored and inspected is physically identified, in accordance with workplace procedures |
| | 5.2 | Single fuel reciprocating engine plant is monitored and inspected to detect deviations, in accordance with workplace procedures |
| | 5.3 | Corrective action is taken, in accordance with workplace procedures |
| | 5.4 | Appropriate personnel are notified when defects are detected, in accordance with workplace procedures |
| 6 Complete documentation | 6.1 | Single fuel reciprocating engine plant problems, |

movements, abnormalities and status are reported, in accordance with workplace procedures

- 6.2** Documentation is updated, 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 UEPOPS247B Operate and monitor an internal combustion single fuel reciprocating engine.

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 UEPOPS247 Operate and monitor an internal combustion single fuel reciprocating engine

Modification History

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:

- analysing single fuel engine plant faults using data analysis techniques and tools
- applying Work, Health and Safety (OHS)/Occupational Health and Safety (OHS) requirements including:
 - emergency procedures
 - risk controls
 - safe work practices
- communicating with personnel
- completing documentation using recording procedures
- complying with legislation, industry standards, codes of practice and regulations
- identifying single fuel engine plant status
- interpreting manufacturers' specifications and manuals
- monitoring and inspecting single fuel engine plant operation
- operating single fuel engines
- organising resources
- preparing and planning work
- preparing single fuel engine plant and/or equipment for operation
- recognising and responding to abnormal single fuel engine plant operating conditions
- testing single fuel engine plant operationally using diagnostic and testing techniques

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:

- legislation, industry standards, codes of practice and regulations
- manufacturers' specifications and manuals
- single fuel engine internal combustion reciprocating engine types and characteristics
- single fuel engine plant and equipment, its location and operating parameters

- single fuel engine plant status
- WHS/OHS legislated requirements including:
 - emergency procedures
 - risk control measures
 - safe work 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

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