



Australian Government

UEPOPS078 Operate and monitor an internal combustion dual fuel reciprocating engine

Release: 1

UEPOPS078 Operate and monitor an internal combustion dual fuel reciprocating engine

Modification History

Release 1. This is the first release of this unit of competency in the UEP Electricity Supply Industry - Generation Sector Training Package Release 2.0.

Application

This unit involves the skills and knowledge required to operate, inspect and monitor internal combustion dual fuel reciprocating engines.

An internal combustion dual fuel reciprocating engine is fed with fossil fuels. Internal combustion dual fuel 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 dual fuel reciprocating engine plant, change fuel type during operation, test internal combustion dual fuel reciprocating engine plant operations, analyse internal combustion dual fuel reciprocating engine plant faults, monitor and inspect internal combustion dual fuel reciprocating engine plant, and complete all documentation. Individuals will, in general, work under supervision, in a power generating facility as an operator.

Power generation plant operators are 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.

Pre-requisite Unit

There are no prerequisite units

Competency Field

Operations

Unit Sector

Electricity generation

Elements and Performance Criteria

ELEMENTS

PERFORMANCE CRITERIA

Elements describe the essential outcomes.

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

1 Plan and prepare work

- 1.1** Work health and safety (WHS)/occupational health and safety (OHS) regulations, legislative requirements, codes of practice, manufacturers' recommendations and specifications, environmental requirements and workplace procedures are identified, applied and monitored
- 1.2** Work requirements are identified from relevant personnel and documentation in accordance with workplace procedures
- 1.3** Documentation to determine internal combustion dual fuel reciprocating engine plant status is assessed and evaluated in accordance with workplace procedures
- 1.4** Inspection and field preparations for internal combustion dual fuel reciprocating engine plant service are carried out in accordance with manufacturers' recommendations and specifications, and workplace procedures
- 1.5** Internal combustion dual fuel reciprocating engine plant operational prerequisites are established in accordance with manufacturers' recommendations and specifications, and workplace procedures
- 1.6** Sequence for recommissioning of internal combustion dual fuel reciprocating engine plant is determined in accordance with workplace procedures

2 Operate internal combustion dual fuel reciprocating engine plant

- 2.1** Internal combustion dual fuel reciprocating engine plant is operated in accordance with manufacturers' recommendations and specifications, and workplace procedures
- 2.2** Internal combustion dual fuel reciprocating engine plant is monitored and observed to detect deviations from normal operating conditions in accordance with workplace procedures
- 2.3** Corrective actions are taken to rectify internal combustion dual fuel reciprocating engine plant abnormalities in accordance with manufacturers' recommendations and specifications, and workplace procedures
- 2.4** Changeover of fuel type is monitored and observed to

		detect deviations from expected results in accordance with workplace procedures
3 Test internal combustion dual fuel reciprocating engine plant operation	3.1	Operational tests are performed in accordance with workplace procedures
	3.2	Internal combustion dual fuel reciprocating engine plant is observed for correct operational response in accordance with workplace procedures
4 Analyse internal combustion dual fuel reciprocating engine plant faults	4.1	Cause of abnormal internal combustion dual fuel reciprocating engine plant operating conditions are identified by analysing technical and operational information in accordance with workplace procedures
	4.2	Internal combustion dual fuel reciprocating engine plant integrity and personnel safety is maintained and in consultation with relevant personnel and technical and operational documentation in accordance with workplace procedures
5 Monitor and inspect internal combustion dual fuel reciprocating engine plant	5.1	Internal combustion dual fuel reciprocating engine plant is monitored and inspected for normal operation and to detect deviations in accordance with workplace procedures
	5.2	Relevant personnel are notified when defects are detected in accordance with workplace procedures
6 Complete documentation	6.1	Internal combustion dual fuel reciprocating engine plant problems, 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 UEP Electricity Supply Industry - Generation

Sector Training Package Companion Volume Implementation Guide.

Unit Mapping Information

This unit replaces and is equivalent to UEPOPS248 Operate and monitor an internal combustion dual 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 UEPOPS078 Operate and monitor an internal combustion dual fuel reciprocating engine

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Performance Evidence

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

- analysing internal combustion dual reciprocating engine plant faults using data analysis techniques and tools
- applying work health and safety (WHS)/occupational health and safety (OHS) requirements, including:
 - emergency procedures
 - risk control measures
 - safe working practices
- changing fuel type during operation
- communicating with personnel
- completing documentation
- complying with regulations, legislative requirements, codes of practice, manufacturers' recommendations and specifications, and environmental requirements
- identifying internal combustion dual reciprocating engine plant status
- interpreting manuals
- monitoring and inspecting internal combustion dual reciprocating engine plant operations
- operating dual fuel engines
- preparing and planning work
- preparing internal combustion dual reciprocating engine plant and equipment for operation
- recognising and responding to abnormal internal combustion dual reciprocating engine plant operating conditions
- testing internal combustion dual reciprocating engine plant operationally using diagnostic and testing techniques
- utilising fuel changeover equipment and systems
- working with permit to work system.

Knowledge Evidence

Evidence required to demonstrate competence in this unit must be relevant to and satisfy all the

requirements of the elements and performance criteria and include knowledge of:

- arrangements of power production plant
- internal combustion dual reciprocating engine plant and equipment, location and operating parameters
- internal combustion dual reciprocating engine plant status, including fuel changeover equipment
- internal combustion reciprocating engine types and characteristics
- manuals
- permit to work system
- regulations, legislative requirements, codes of practice, manufacturers' recommendations and specifications, and environmental requirements
- WHS/OHS requirements, including:
 - emergency procedures
 - risk control measures
 - safe work practices
- workplace documentation
- workplace policies and procedures.

Assessment Conditions

Assessors must hold credentials specified within the Standards for Registered Training Organisations current at the time of assessment.

Assessment must satisfy the Principles of Assessment and Rules of Evidence and all regulatory requirements included within the Standards for Registered Training Organisations current at the time of assessment.

Assessment must occur in workplace operational situations where it is appropriate to do so; where this is not appropriate, assessment must occur in simulated workplace operational situations that replicate workplace conditions.

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.

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 (PPE) currently used in industry
- applicable documentation, including workplace procedures, equipment specifications, regulations, codes of practice and operation manuals.

Links

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