



Australian Government

UEPOPS405 Operate and monitor A.C. electrical systems

Release: 1

UEPOPS405 Operate and monitor A.C. electrical systems

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 and monitor the local and remote operation of Alternate Current (A.C.) electrical systems including switchgears, switchboards, distribution systems and transformers.

The main functions of electrical systems in power generating facilities is to distribute electrical power to system components and to provide electrical protection for power sources and for the components.

Competency in this unit requires the ability to plan switching operations work; carry out operation of switchgears and switchboards; test switchgears and equipment operation; analyse A.C. electrical system, switchgear and equipment faults; inspect and monitor A.C. electrical system and switchboards and the completion of all documentation. Individuals will, in general, work under supervision, in a power generation 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

PERFORMANCE CRITERIA

Elements describe the essential outcomes.

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

1 Plan and prepare for switching operations

- 1.1** Safety issues related to operating and monitoring Alternating Current (A.C.) electrical systems 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 appropriate personnel and documentation
- 1.3** Documentation to determine A.C. electrical system plant status is assessed and evaluated, in accordance with workplace procedures
- 1.4** Equipment inspection, preoperational checks and preparations for A.C. electrical system service are carried out, in accordance with workplace procedures and manufacturers' recommendations
- 1.5** Switchboard and electrical equipment operational prerequisites and switching sequences are established, in accordance with workplace procedures and manufacturers' recommendations

2 Carry out operation of switchgear and switchboards

- 2.1** Operation of switchgear is carried out, in accordance with workplace procedures and manufacturers' recommendations
- 2.2** Isolation, removal and reinstatement of switchgear, switchboards and rectification system is carried out, in accordance with workplace procedures and manufacturers' recommendations
- 2.3** Paralleling and balancing requirements are assessed to meet A.C. electrical system stability, in accordance with workplace procedures
- 2.4** Rectification system is operated, isolated and reinstated, in accordance with workplace procedures and manufacturers' recommendations

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| 3 Test switchgear and equipment operation | 3.1 Operational tests are performed, in accordance with workplace procedures |
| | 3.2 Switchgear and equipment is observed for correct operational response, in accordance with workplace procedures |
| | 3.3 Corrective action is taken, in accordance with workplace procedures, when switch gear and equipment response does not meet with documentation, A.C. electrical system integrity or personnel safety requirements |
| | 3.4 Switchgear equipment is returned to required operational status upon completion of testing, in accordance with workplace procedures |
| 4 Analyse A.C. electrical system, switchgear and equipment faults | 4.1 Causes of abnormal A.C. electrical system and switchgear operating conditions are identified, in accordance with workplace procedures, and by analysing technical and operational information |
| | 4.2 Corrective action is taken, in accordance with workplace procedures |
| | 4.3 A.C. electrical system and switchgear plant integrity and personnel safety are maintained, in accordance with workplace procedures, and in consultation with appropriate personnel and technical and operational documentation |
| 5 Inspect and monitor A.C. electrical system and switchboards | 5.1 A.C. electrical system and switchgear to be monitored and inspected is physically identified, in accordance with workplace procedures |
| | 5.2 A.C. electrical system and switchgear is monitored and inspected, in accordance with workplace procedures, for normal operation or to detect deviations |
| | 5.3 Corrective action is taken, in accordance with workplace procedures |
| | 5.4 Appropriate personnel are notified when A.C. electrical system defects and abnormal operating conditions are detected, in accordance with workplace procedures |
| 6 Complete documentation | 6.1 A.C. electrical system equipment problems 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 UEPOPS405B Operate and monitor a.c. electrical systems.

Links

Companion Volume implementation guides are found in VETNet -
<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=1715b9fa-e7bd-441c-bb8d-cf22c9c825a8>