



Australian Government

UEPOPS019 Control electrical energy production

Release: 1

UEPOPS019 Control electrical energy production

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 control the safe operation of energy production to meet demand on an electricity generating unit.

Generating units usually operate independently, with most power generation production facilities consisting of several independent generating units which can be brought online or taken offline as demand fluctuates.

Competency in this unit requires the ability to plan for power generating plant operation, operate generator and excitation system, control generation of electrical energy and the completion of work. Individuals will, in general, work as an operator, in a power generation facility.

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

Elements describe the essential outcomes.

PERFORMANCE CRITERIA

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

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| 1 Plan for plant operation | 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 and resource requirements are identified from relevant personnel and documentation in accordance with workplace procedures |
| | 1.3 Preoperational check on electrical energy production plant is carried out in accordance with workplace procedures |
| 2 Operate generator and excitation system | 2.1 Generator and excitation system is operated in accordance with manufacturers' recommendations and specifications, and workplace procedures |
| | 2.2 Synchronising requirements are assessed, evaluated and achieved to ensure generator and excitation system stability in accordance with workplace procedures |
| | 2.3 Generator and excitation system is monitored and observed to detect deviations from normal operating conditions in accordance with workplace procedures |
| | 2.4 Corrective actions are taken to rectify generator and excitation system abnormalities in accordance with manufacturers' recommendations and specifications, and workplace procedures |
| 3 Control generation of electrical energy | 3.1 Generator output is adjusted to meet demand in accordance with workplace procedures |
| | 3.2 Reactive power generation and voltage regulation requirements are assessed and the generator and excitation system are controlled to achieve output in accordance with workplace procedures |
| | 3.3 Generator stabilities and operating limits are assessed and the generator and excitation system are controlled to maintain those limits in accordance with manufacturers' recommendations and specifications, and workplace procedures |
| | 3.4 Generator cooling systems and limits are monitored and assessed and the generator and excitation system are controlled to maintain those limits in accordance with |

manufacturers' recommendations and specifications and workplace procedures

- 4 Complete documentation**
- 4.1** Power generating plant problems, movements and status are reported in accordance with workplace procedures
 - 4.2** 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 UEPOPS457 Control electrical energy production.

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 UEPOPS019 Control electrical energy production

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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 electrical energy production plant faults using diagnostic and testing techniques
- applying work health and safety (WHS)/occupational health and safety (OHS) requirements, including:
 - emergency procedures
 - risk control measures
 - safe working practices
- completing documentation
- controlling generation of electrical energy production
- directing the operation of interacting systems, electrical energy production plant and equipment
- identifying electrical energy production plant status
- implementing regulations, legislative requirements, codes of practice, manufacturers' recommendations and specifications, and environmental requirements
- interpreting manuals
- maintaining generator unit integrity
- monitoring electrical energy production unit operations
- operating generator and excitation system
- organising resources
- planning for electrical energy production plant operation
- reviewing electrical energy production plant operation using data analysis techniques and tools
- undertaking corrective actions.

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:

- analysis of electrical energy production plant faults

- arrangements of power generating production plant
- control of electrical energy generation production
- electrical energy production plant and equipment, location and operating parameters
- electrical energy production plant operation monitoring
- electrical energy production unit operations
- generator and system stability, including system components and interactions
- generator excitation and cooling system types and characteristics
- manuals
- operation of generator and excitation systems
- regulations, legislative requirements, codes of practice, manufacturers' recommendations and specifications, and environmental requirements
- WHS/OHS requirements, including:
 - emergency procedures
 - risk control measures
 - safe working 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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