



**Australian Government**

# **UEPOPS443 Coordinate wind farm operations**

**Release: 1**

# UEPOPS443 Coordinate wind farm operations

## 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 coordinate the safe management of energy production at a wind farm.

A wind farm consists of a group of wind turbines in the same location used to produce electricity. Turbines at a wind farm are typically interconnected, with a substation transformer used to send the power to its grid destination.

Competency in this unit requires the ability to plan for plant operation, monitor wind farm operations, control wind farm electrical energy production, test wind farm operation, analyse system or plant faults and the completion of all documentation. Individuals will, in general, work as an operator at a wind farm with responsibilities for coordination activities.

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.

|                                                         |            |                                                                                                                                                                                       |
|---------------------------------------------------------|------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>1 Plan for plant operation</b>                       | <b>1.1</b> | Safety issues are identified, in accordance with workplace procedures, to comply with Work, Health and Safety (WHS)/Occupational Health and Safety (OHS) requirements                 |
|                                                         | <b>1.2</b> | Work and wind farm plant and resource requirements are identified, in accordance with workplace procedures, from relevant information and documentation                               |
|                                                         | <b>1.3</b> | Preoperational checks of wind farm plant and equipment are carried out, in accordance with workplace procedures                                                                       |
| <b>2 Monitor wind farm operations</b>                   | <b>2.1</b> | Wind turbines and equipment are monitored for normal operation, in accordance with workplace procedures                                                                               |
|                                                         | <b>2.2</b> | Alarms are acknowledged, prioritised and responded to, in accordance with workplace procedures                                                                                        |
|                                                         | <b>2.3</b> | Deviations from wind farm operations are identified and corrective actions are taken, in accordance with workplace procedures                                                         |
|                                                         | <b>2.4</b> | Wind farm plant and equipment use is monitored in key areas and trends in problems are identified, in accordance with workplace procedures                                            |
| <b>3 Control wind farm electrical energy production</b> | <b>3.1</b> | Wind farm energy output is controlled, in accordance with workplace procedures, to meet operational or load requirements of power generation facility                                 |
|                                                         | <b>3.2</b> | Wind turbines are manually adjusted to meet operation requirements, in accordance with workplace procedures and manufacturers' recommendations                                        |
|                                                         | <b>3.3</b> | Wind turbines are taken out of service and are shut down to meet operational and maintenance requirements, in accordance with workplace procedures and manufacturers' recommendations |
|                                                         | <b>3.4</b> | Wind turbines are run-up and placed into service to meet operational requirements, in accordance with workplace                                                                       |

- procedures and manufacturers' recommendations
- 3.5** Appropriate personnel are notified, in accordance with workplace procedures, when wind turbine defects and abnormal operating conditions are detected
- 4 Test wind farm operation**
- 4.1** Wind farm operational tests are performed, in accordance with workplace procedures
- 4.2** Wind farm system and plant is observed for correct operational response, in accordance with workplace procedures
- 4.3** Corrective action is taken, in accordance with workplace procedures, when response does not meet with documentation, wind farm plant and system integrity or personnel safety requirements
- 4.4** Wind farm system and plant is returned to required operational status, in accordance with workplace procedures, upon completion of test
- 5 Analyse wind farm system and plant faults**
- 5.1** Causes of abnormal wind farm system operating conditions are identified, in accordance with workplace procedures, by analysing technical and operational information
- 5.2** Corrective actions to rectify faults are determined, in accordance with workplace procedures
- 5.3** Wind farm system and plant integrity and personnel safety are maintained, in accordance with workplace procedures, through consultation with personnel and technical and operational documentation
- 5.4** Appropriate personnel, including specialists, are arranged, in accordance with workplace procedures, for investigation of identified operational wind farm abnormalities
- 6 Complete documentation**
- 6.1** Wind farm plant problems, movements 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 UEPOPS443A Coordinate Wind Farm Operations.

## **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 UEPOPS443 Coordinate wind farm operations

## 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 wind farm system and plant faults using data analysis techniques and tools
- applying Work, Health and Safety (WHS)/Occupational Health and Safety (WHS) requirements including:
  - emergency procedures
  - risk control measures
  - safe working practices
- communicating with personnel
- completing documentation using recording procedures
- controlling wind farm electrical energy production
- coordinating wind farm electrical energy generation including:
  - identifying wind farm plant status
  - operating interacting systems
  - running wind farm plant and equipment
- implementing legislation, industry standards, codes of practice and regulations
- interpreting manufacturers' specifications and manuals
- monitoring wind farm operations
- planning for wind farm plant operation
- preparing wind farm plant and equipment for operation
- recognising and responding to abnormal wind farm plant operating conditions
- testing wind farm operation 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

- typical arrangements of power production plant
- WHS/OHS legislated requirements including:
  - emergency procedures
  - risk control measures
  - safe working practices
- wind farm generator and system stability principles
- wind farm plant and equipment, its location and operating parameters including:
  - wind farm control system types
  - wind farm system components and interactions
  - wind turbine and generator types and characteristics
  - wind turbine support systems
- 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>