



Australian Government

UEPOPS431 Collect and analyse hydrological and meteorological data

Release: 1

UEPOPS431 Collect and analyse hydrological and meteorological data

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 predict and determine inflows in catchment areas within a hydro powered electricity generation system.

Inflow forecasting for hydro powered electricity generation systems depends on several elements such as weather, snow cover, ground conditions and the run off process in catchment areas. All these elements help give insight into future water availability.

Competency in this unit requires the ability to plan for work, plan and prepare to conduct data collection, undertake data collection, verify and report data collection and complete documentation. Individuals will, in general, work under supervision, in a power generation facility as an operator.

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

UEPOPS209 Perform process plant inspection

Competency Field

Operations

Unit Sector

Electricity generation

Elements and Performance Criteria

ELEMENTS

Elements describe the essential outcomes.

1 Plan for work related issues

2 Plan and prepare to conduct data collection

3 Undertake data collection

PERFORMANCE CRITERIA

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

- 1.1** Safety issues are identified, in accordance with workplace procedures, industry standards, legislative requirements and Work, Health and Safety (WHS)/Occupational Health and Safety (OHS) regulations
- 1.2** Work, hydrological and meteorological equipment and resource requirements are identified from information and documentation, in accordance with workplace procedures
- 1.3** Preoperational check on hydrological and meteorological equipment is carried out, in accordance with workplace procedures
- 2.1** Appropriate hydrological and meteorological equipment is selected, in accordance with workplace procedures, to conduct data collection
- 2.2** Hydrological and meteorological equipment is recalibrated, in accordance with workplace procedures and manufacturers' specifications preparation for survey
- 2.3** Potential hydrological and meteorological hazards are assessed and risk control measures are implemented, in accordance with workplace procedures
- 2.4** Meteorological charts and data are assessed for use, in accordance with workplace procedures
- 3.1** Measurement site in catchment area is established, in accordance with workplace procedures
- 3.2** Hydrological and meteorological instrumentation is set out in the catchment area, in accordance with workplace procedures and manufacturers' specifications
- 3.3** Measurements are taken, in accordance with workplace procedures
- 3.4** Measurements are record, in accordance with workplace procedures

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|---------------------------------|------------|---|
| | 3.5 | Tools and equipment used, are cleaned and stored, in accordance with workplace procedures |
| 4 Verify and report data | 4.1 | Measurements are analysed to verify accuracy of findings, and data is entered into data system, in accordance with workplace procedures |
| | 4.2 | Work order requirements are completed, 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 UEPOPS431B Collect and analyse hydrological and meteorological data.

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 UEPOPS431 Collect and analyse hydrological and meteorological data

Modification History

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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, performance criteria and range of conditions on at least two separate occasions and includes:

- analysing meteorological and hydrographical data using 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
- completing documentation
- coordinating the operation of meteorological and hydrographical instrumentation and equipment to undertake
 - conducting and calculating depth measurements
 - determining inflows based on snow melt
 - measuring snow depth and stream flows
- displaying safety procedures in remote locations including survival techniques
- implementing legislation, industry standards, codes of practice and regulations
- planning and preparing to conduct data collection
- recognising abnormal meteorological and hydrographical conditions interpreting manufacturers' specifications and manuals
- undertaking data collection
- verifying and reporting data collection

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:

- calibration of meteorological and hydrographical instrumentation
- inflow forecasting
- interpretation of hydrological and meteorological data using analysing tools and techniques

- interpreting meteorological charts
- legislation, industry standards, codes of practice and regulations
- manufacturers' specifications and manuals
- meteorological and hydrographical equipment, its location and operating parameters
- personal safety and working alone in remote locations
- snow depth gauging
- stream gauging
- survival techniques including hypothermia and snake avoidance
- water quality monitoring
- WHS/OHS legislated requirements including:
 - risk control measures
 - emergency procedures
 - safe working 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.

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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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