



Australian Government

UEERA0041 Evaluate new and alternative technologies applicable to electrotechnology applications

Release: 1

UEERA0041 Evaluate new and alternative technologies applicable to electrotechnology applications

Modification History

Release 1. This is the first release of this unit of competency in the UEE Electrotechnology Training Package.

Application

This unit involves the skills and knowledge required to evaluate new and alternative technologies applicable to electrotechnology applications.

It includes working safely and comparing manufacturer's technical data for alternative or new technologies with specifications for a proposed project.

It also includes conducting evaluation tests, evaluating systems/components from technical data and/or measured parameters, and reporting findings for use in design work.

No licensing, legislative or certification requirements apply to this unit at the time of publication.

Pre-requisite Unit

Not applicable

Competency Field

Refrigeration and air-conditioning

Unit Sector

Electrotechnology

Elements and Performance Criteria

ELEMENTS

Elements describe the essential outcomes.

1 Prepare to evaluate and report on alternative and new technologies

PERFORMANCE CRITERIA

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

1.1 Work health and safety (WHS)/occupational health and safety (OHS) procedures are obtained and implemented in accordance with workplace procedures

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| | 1.2 | WHS/OHS risk control measures and procedures for work are followed |
| | 1.3 | The extent of evaluation is determined from proposed project specifications and discussions with relevant person/s |
| | 1.4 | Advice is sought from work supervisor to ensure work is coordinated effectively with others |
| | 1.5 | Tools, testing devices and manufacturer technical data required for the work are obtained and checked for correct operation and safety in accordance with workplace procedures |
| 2 | Evaluate alternative and new technologies | |
| | 2.1 | WHS/OHS risk control measures and workplace procedures for carrying out the work are followed |
| | 2.2 | Electrotechnology disciplines applicable to the alternative/new technology being considered are applied to the evaluation process |
| | 2.3 | Manufacturer's technical data for alternative/new technologies is compared with proposed project specifications, budget and regulations |
| | 2.4 | Evaluation tests for each component under scrutiny are conducted in accordance with WHS/OHS requirements and established test methods |
| | 2.5 | New and alternative technologies are evaluated methodically and results/comments systematically noted |
| | 2.6 | Unplanned situations are dealt with safely with the approval of authorised person/s |
| | 2.7 | Evaluation is conducted without damage to systems, circuits, the surrounding environment and/or services using sustainable energy practices |
| 3 | Report on use of alternative and new technologies | |
| | 3.1 | WHS/OHS work completion risk control measures and procedures are followed |
| | 3.2 | Worksite is cleaned and made safe in accordance with workplace procedures |
| | 3.3 | Results of the evaluation, including recommendations and justifications for adoption/rejection of the |

alternative and new technologies, are documented for use in design work

- 3.4** Report is forwarded to appropriate person/s for endorsement 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 UEE Electrotechnology Training Package Companion Volume Implementation Guide.

Evaluating alternative and new technologies must include at least two different proposed projects in any of the following electrotechnology disciplines:

- automated systems
- computer systems
- electrical
- electronics
- industrial electronics and control
- refrigeration and air conditioning
- renewable energy (RE)

Unit Mapping Information

This unit replaces and is equivalent to UEENEEJ150A Evaluate new and alternative technologies applicable to electrotechnology applications.

Links

Companion Volume implementation guides are found in VETNet - -

<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=b8a8f136-5421-4ce1-92e0-2b50341431b6>

Assessment Requirements for UEERA0041 Evaluate new and alternative technologies applicable to electrotechnology applications

Modification History

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Performance Evidence

Evidence required to demonstrate competence in this unit must be relevant to and satisfy all of the requirements of the elements, performance criteria and range of conditions on at least one occasion and include:

- determining the extent of the evaluation
- comparing manufacturer's technical data for alternative or new technologies with proposed project specifications, budget and regulations accurately
- reporting evaluation, including recommendations and justifications for adoption or rejection of the alternative and new technologies evaluated
- dealing with unplanned events
- applying environmental and sustainable energy principles and practices
- applying relevant legislation, industry standards, codes of practice and regulations
- applying relevant work health and safety (WHS)/occupational health and safety (OHS) requirements, including:
 - applying safe working practices
 - implementing risk control measures
- conducting evaluation tests
- determining need to test or measure live work
- evaluating performance benefits and limitations of new and developed technologies for given applications
- making and documenting recommendations and justifications.

Knowledge Evidence

Evidence required to demonstrate competence in this unit must be relevant to and satisfy all of the requirements of the elements, performance criteria and range of conditions and include knowledge of:

- new and alternative technology sources, processes for their adoption, safe working practices and relevant standards, codes and regulations including:
 - sources of information on alternative or new technologies:
 - industry organisations

- industry technical journals
- government and private research papers/literature
- manufacturers' bulletins
- comparison of technical data from different manufacturers
- evaluating performance benefits and limitations of new and developed technologies for given applications, encompassing:
 - capital cost-benefits
 - operations efficiency
 - risk hazardous and issues related to environmental and health and safety
 - functionality
- processes to facilitate adoption:
 - research; analyses; reporting; recommending; and utilising a range of techniques, processes and technologies
- proposed project specifications, budget and regulations
- relevant manufacturer specifications
- relevant test methods
- relevant tools, testing devices and manufacturer technical data
- relevant WHS/OHS legislated requirements, including:
 - environmental and sustainable energy principles and practices
 - risk control measures
- relevant workplace documentation
- relevant 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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