List of National Electrotechnology Training Package Qualifications

Certificate I Qualifications

Certificate I in Electrotechnology UTE 1 01 02

Certificate I in Sustainable Energy (Electrotechnology) UTE 1 02 02

Certificate II Qualifications

Certificate II in Electrotechnology Business Support UTE 2 01 99

Certificate II in Electrotechnology Data Communications UTE 2 02 99

Certificate II in Electrotechnology Powerline (Vegetation Control) UTE 2 03 99

Certificate II in Electrotechnology Remote Area Essential Operations UTE 2 04 99

Certificate II in Electrotechnology Powerline (Vegetation Control) UTE 2 03 99

Certificate II in Electrotechnology Servicing UTE 2 05 04

Certificate II in Electrotechnology Technical Support UTE 2 06 04

Certificate II in Electrotechnology Fire Alarm Servicing UTE 2 07 06

Certificate III Qualifications

Certificate III in Electrotechnology Assembly and Servicing UTE 3 01 04

Certificate III in Electrotechnology Building Services UTE 3 02 99

Certificate III in Electrotechnology Business Administration UTE 3 03 99

Certificate III in Electrotechnology Communications UTE 3 04 02

Certificate III in Electrotechnology Computer Systems UTE 3 05 99

Certificate III in Electrotechnology Data Communications UTE 3 06 99

Certificate III in Electrotechnology Entertainment and Servicing UTE 3 07 02

Certificate III in Electrotechnology Instrumentation UTE 3 08 99

Certificate III in Electrotechnology Refrigeration and Air Conditioning UTE 3 09 99

Certificate III in Electrotechnology Scanning UTE 3 10 99

Certificate III in Electrotechnology Systems Electrician UTE 3 11 99

Certificate III in Electrotechnology Fire Protection Control UTE 3 12 06

Certificate IV Qualifications

Certificate IV in Electrotechnology Apparatus Servicing UTE 4 01 99
Certificate IV in Electrotechnology Building Services UTE 4 02 99
Certificate IV in Electrotechnology Communications UTE 4 03 02
Certificate IV in Electrotechnology Computer Systems UTE 4 04 99
Certificate IV in Electrotechnology Contracting UTE 4 05 99
Certificate IV in Electrotechnology Entertainment and Servicing UTE 4 06 02
Certificate IV in Electrotechnology Explosion-protection UTE 4 07 06
Certificate IV in Electrotechnology Inspection and Audits UTE 4 08 99
Certificate IV in Electrotechnology Instrumentation UTE 4 09 99
Certificate IV in Electrotechnology Radar Systems UTE 4 10 99
Certificate IV in Electrotechnology Refrigeration & Air Conditioning UTE 4 11 99
Certificate IV in Electrotechnology Systems Electrician UTE 4 12 02
Certificate IV in Electrotechnology Renewable Energy UTE 4 13 01
Certificate IV in Electrotechnology Fire Protection Control UTE 4 14 06

Diploma Qualifications

Diploma in Computer Systems Engineering UTE 5 01 99
Diploma in Electrical Engineering UTE 5 02 99
Diploma in Electronic Engineering UTE 5 03 99
Diploma in Instrumentation and Control Engineering UTE 5 04 99
Diploma in Refrigeration and Air Conditioning Engineering UTE 5 05 99
Diploma in Electrotechnology Renewable Energy UTE 5 06 01

Advanced Diploma Qualifications

Advanced Diploma in Computer Systems Engineering UTE 6 01 99
Advanced Diploma in Electrical Engineering UTE 6 02 99
Advanced Diploma in Electronic Engineering UTE 6 03 99
Advanced Diploma in Instrumentation and Control Engineering UTE 6 04 99

National Electrotechnology Training Package
UTE99 V3.03

Volume Index

August 2006

EE-Oz Training Standards (www.ee-oz.com.au)

National Electrotechnology Training Package (UTE99)

Modification History

V3.03 – August 06

Modification History

MODIFICATION HISTORY – ENDORSED MATERIALS			
Please refer to the National Training Information Service for the latest version of Units of Competency and Qualification information (http://www.ntis.gov.au).			
UTE99 Electrotechnology Training Package			**Sheet: 1 of 2**
Version	**Date of Release**	**Authorisation:**	**Comments**
3.03	August, 2006	NQC	Inclusion of Certificate II qualification in Electrotechnology Fire Alarm Servicing and a Certificate III and IV in Electrotechnology Fire Protection Control to meet the requirements of the industry represented by the Fire Protection Association. A number of new competency standard units have been included under these qualifications: NES020, 21, 22, 22, 24, 25, 26, 27, 28, 29, 30, 31, 32, 33, 38, 121, 122, 123, 306, 416 and 508. Further the existing unit NES405A Inspect electrical apparatus and associated circuits has been retitled and modified at the request of the Queensland Electrical Regulator and ERAC (now NES405B Inspect/investigate electrical apparatus and associated circuits) and amended in the core of the qualification Certificate IV in Electrotechnology Explosion-protection and optional unit in specialisation of Installation and Servicing in Certificate IV in Electrotechnology Systems Electrician. Addition of an optional unit (NES105HA) in both specialisations in Certificate III in Electrotechnology Building Services. Minor amendment to knowledge and skills in NES014 and NES01 associated with the administration and wholesaling specialisations and related amendment to the qualification.
3.02	August, 2005	NTQC	Amendment to Certificate II in Electrotechnology Servicing by modifications in the specialisation of Appliances – Refrigeration, to units of competency NES201E C, NES202E C and NES401E C; in the Category of Refrigeration and Air Conditioning because of changes to Federal Legislation (refrigerant handling licenses). Corrected version error for units NES209 and NES505 to align with NTIS.
3.01	March 2004	NTQC	Note 1: Amendment to Certificate II in Electrotechnology Servicing by inclusion of specialisation of Fire Alarms and amendments to units of competency NES201B C, NES202B C and NES401B C; in the Category of *Electrical*, and Certificate II in Electrotechnology Technical Support and Certificate III in Electrotechnology Assembly and Servicing. Note 2: Amendment to Glossary to include three additional types of explosion protection techniques at - Additional glossary terms related to electrical equipment in hazardous area units of competency - Explosion-protected equipment – Techniques for: T. Mixed explosion-protection techniques - Ex mixed: e.g. the use of one or more explosion-protection techniques for the following sub-endorsements. See explosion-protection. T1 – Ex “pD” – Pressurisation, dust T2 – Ex “mD” – Encapsulation, dust T3 – Ex “iD” – Intrinsic safety, dust

3.00	March 2003	NTQC	Inclusion of Certificate I in Electrotechnology, Certificate I in Sustainable Energy (Electrotechnology), Digital TV enhancement, CIV in Electrotechnology Systems Electrician Enhancement and/or new or amended units NES023A, NES050-NES065A, NES120A, NES206B, NES220A, NES414A, NES415A, NES507A
2.00	May 2001	NTQC	Inclusion of renewable energy incorporating two new qualifications. Many detail adjustments including typographical corrections plus "accidental omissions", involving units: UTE NES208A, UTE NES102A, UTE NES107A, UTE NES607A, UTE NES608 A, UTE NES502A, UTE NES703 A
1.00	September 1999	NTFC	Primary release

Forms control: All endorsed training packages will have a version number displayed on the imprint page of every volume constituting that training package. Every training package will display an up-to-date copy of this modification history form, to be placed immediately after the contents page of the first volume of the training package. Comments on changes will only show sufficient detail to enable a user to identify the nature and location of the change. Changes to training packages will generally be batched at quarterly intervals. This modification history form will be included within any displayed sample of that training package and will constitute all detail available to identify changes.

Important

Training Packages are living documents. Changes are periodically made to reflect the latest industry practices.

As a user of the Training Package, and before commencing any form of training or assessment, you must ensure delivery is from the **current version**.

Ensure you are complying with this requirement by:

- checking the version identifier code of the version you currently have (located on the imprint page, just below the copyright statement)
- accessing the Australian Training Products (ATP) website and comparing the version identifier. This information is displayed in the first few pages of the Training Package.

Where the ATP website shows a different version, the Modification History, again shown on the ATP website in the first few pages of the Training Package, will display the changes made in versions. ATP website for version comparison: http://www.atpl.net.au

The Modification History is also visible on the website of the developer of the Training Package, EE-Oz Training Standards: http://www.ee-oz.com.au

Changes in units of competency and packaging of qualifications are reflected on the **National Training Information Service** which displays only current information: **http://www.ntis.gov.au**

National Electrotechnology Training Package

Volume 1

Part A, B & C

UTE99 – V3.03

UTE99 Electrotechnology Training Package

This Training Package has been produced on behalf of the national training system. It was funded under National Programmes administered by the Australian National Training Authority until 25 August 2005 and subsequently by the Commonwealth of Australia from that date.

Published by:
Australian Training Products Ltd
Level 25 / 150 Lonsdale St, Melbourne, 3000
PO Box 12211 A'Beckett St Post Office
Melbourne, Victoria 8006, Australia
Telephone +61 3 9655 0600
Facsimile +61 3 9639 4684
E-mail: sales@atpl.net.au

First published September 1999
Stockcode: atp9264
ISBN: 0 642 80156 8 (set)

Training Package Developer:	ElectroComms and EnergyUtilities Industry Skills Council trading as EE-Oz Training Standards (www.ee-oz.com.au)
Content Advice:	Content information advice can be obtained from EE-Oz Training Standards

UTE99 Electrotechnology Training Package – Volume 1 of 9 – Parts A,B,C
Printed for Australian Training Products Ltd by Mercury Printeam, Melbourne, Australia

Version 3.03
Review Date: 30 June 2004

MODIFICATION HISTORY – ENDORSED MATERIALS

Please refer to the National Training Information Service for the latest version of Units of Competency and Qualification information (http://www.ntis.gov.au).

UTE99 Electrotechnology Training Package

Sheet: 1 of 1

Version	Date of Release	Authorisation:	Comments
3.03	August, 2006	NQC	Inclusion of Certificate II qualification in Electrotechnology Fire Alarm Servicing and a Certificate III and IV in Electrotechnology Fire Protection Control to meet the requirements of the industry represented by the Fire Protection Association. A number of new competency standard units have been included under these qualifications: NES020, 21, 22, 22, 24, 25, 26, 27, 28, 29, 30, 31, 32, 33, 38, 121, 122, 123, 306, 416 and 508. Further the existing unit NES405A Inspect electrical apparatus and associated circuits has been retitled and modified at the request of the Queensland Electrical Regulator and ERAC (now NES405B Inspect/investigate electrical apparatus and associated circuits) and amended in the core of the qualification Certificate IV in Electrotechnology Explosion-protection and optional unit in specialisation of Installation and Servicing in Certificate IV in Electrotechnology Systems Electrician. Addition of an optional unit (NES105HA) in both specialisations in Certificate III in Electrotechnology Building Services. Minor amendment to knowledge and skills in NES014 and NES01 associated with the administration and wholesaling specialisations and related amendment to the qualification.
3.02	August, 2005	NTQC	Amendment to Certificate II in Electrotechnology Servicing by modifications in the specialisation of Appliances – Refrigeration, to units of Competency NES201E C, NES202E C and NES401E C; in the Category of Refrigeration and Air Conditioning because of changes to Federal Legislation (refrigerant handling licences). Corrected version error for units NES209 and NES505 to align with NTIS.
3.01	March 2004	NTQC	Note 1: Amendment to Certificate II in Electrotechnology Servicing by inclusion of specialisation of Fire Alarms and amendments to units of competency NES201B C, NES202B C and NES401B C; in the Category of *Electrical*, and Certificate II in Electrotechnology Technical Support and Certificate III in Electrotechnology Assembly and Servicing. Note 2: Amendment to Glossary to include three additional types of explosion protection techniques at - Additional glossary terms related to electrical equipment in hazardous area units of competency - Explosion-protected equipment – Techniques for: T. Mixed explosion-protection techniques - Ex mixed: e.g. the use of one or more explosion-protection techniques for the following sub-endorsements. See explosion-protection. T1 – Ex “pD” – Pressurisation, dust T2 – Ex “mD” – Encapsulation, dust T3 – Ex “iD” – Intrinsic safety, dust
3.00	March 2003	NTQC	Inclusion of Certificate I in Electrotechnology, Certificate I in Sustainable Energy (Electrotechnology), Digital TV enhancement, CIV in Electrotechnology Systems Electrician Enhancement and/or new or amended units NES023A, NES050-NES065A, NES120A, NES206B, NES220A, NES414A, NES415A, NES507A

2.00	May 2001	NTQC	Inclusion of renewable energy incorporating two new qualifications. Many detail adjustments including typographical corrections plus "accidental omissions", involving units: UTE NES208A, UTE NES102A, UTE NES107A, UTE NES607A, UTE NES608 A, UTE NES502A, UTE NES703 A
1.00	September 1999	NTFC	Primary release

Forms control: All endorsed training packages will have a version number displayed on the imprint page of every volume constituting that training package. Every training package will display an up-to-date copy of this modification history form, to be placed immediately after the contents page of the first volume of the training package. Comments on changes will only show sufficient detail to enable a user to identify the nature and location of the change. Changes to training packages will generally be batched at quarterly intervals. This modification history form will be included within any displayed sample of that training package and will constitute all detail available to identify changes.

Important

Training Packages are living documents. Changes are periodically made to reflect the latest industry practices.

As a user of the Training Package, and before commencing any form of training or assessment, you must ensure delivery is from the **current version**.

Ensure you are complying with this requirement by:

- checking the version identifier code of the version you currently have (located on the imprint page, just below the copyright statement)
- accessing the Australian Training Products (ATP) website and comparing the version identifier. This information is displayed in the first few pages of the Training Package.

Where the ATP website shows a different version, the Modification History, again shown on the ATP website in the first few pages of the Training Package, will display the changes made in versions. ATP website for version comparison: http://www.atpl.net.au

The Modification History is also visible on the website of the developer of the Training Package, EE-Oz Training Standards: http://www.ee-oz.com.au

Changes in units of competency and packaging of qualifications are reflected on the **National Training Information Service** which displays only current information: **http://www.ntis.gov.au**

Table of contents

PREFACE

1.0 Background

The National Training Package for the Electrotechnology Industry has been prepared by industry representatives from all States/Territories of Australia.

The endorsable components of the Package are comprised of the following three parts:

- Part A - Competency Standards
- Part B - Assessment Guidelines
- Part C - Qualifications

The National Electrotechnology Training Package is to be used by all those involved in the delivery of competencies. This includes:

- State training and recognition authorities who will use the National Training Package as (1) being the industry's advice to government and (2) the minimum requirements to be satisfied by potential and practising Registered Training Organisations in the delivery of services.
- State/Territory Industry Training bodies who will use the National Training Package to underpin their relationship with and support of the State/Territory training and recognition authorities quality systems.
- Registered Training Organisations who will issue qualifications and/or Statements of Attainment based on the requirements outlined in the National Training Package.
- Individual candidates/trainees who will use the provisions of the National Training Package to establish their responsibilities and to protect their prerogatives.

2.0 Outline of this document

In addition to the preface there are three major parts to this document. These three parts have detailed information, which stand alone, however, all parts are interrelated. These parts make up the endorsed components of the National Electrotechnology Training Package.

Part A – Competency standards:

Information in Part A outlines how the competency standards were developed (in broad terms). The industry coverage they can apply to, as well as the format and construction of the individual units is provided. Matters related to language, literacy and numeracy, access and equity and the regulatory environment in which the units may apply is also included.

There are approximately 97 units of competency included in several volumes.

Part A also includes a glossary of terms. The glossary provides a description of those words that are printed in *italics* that appears in the three parts of this document.

Alignment to and incorporation of the Benchmark Electrical/Electronic Cross Industry Competency Standards and the Electrical Equipment in Hazardous Areas Competency Standards is also included as are relationships between unit(s) and the key competencies.

Part B – Assessment guidelines:

Information in Part B outlines how the assessment guidelines inform an RTO about the infrastructure requirements they will need to enable them to carry out assessment activities related to the National Electrotechnology Training Package. It includes such things as assessment systems, the role of Registered Training Organisations, assessment pathways, recognition arrangements, assessor qualifications and sources of information.

Part C – Qualifications:

Information in Part C outlines how the qualifications are structured, along with their composition and content. Completion requirements including customisation is included along with entry, exit and articulation arrangements are provided. Titles of the qualifications with their descriptions are also included.

3.0 Responsibility for systems maintenance

The National Training Package for the Electrotechnology Industry is to be managed and maintained by EE-Oz Training Standards.

The National Electrotechnology Competency Advisory Council (NECAC) is endorsed by the National Utilities and Electrotechnology ITAB to provide the pre-eminent and authoritative advice on the National Electrotechnology Training Package. The council is representative of the Electrotechnology Industry throughout Australia and tripartite. The Council may seek advice in relation to technical matters and the like from the following:

- The National Electrotechnology Training Advisory Group (NETAG);
- The Electrical Regulatory Advisory Council (ERAC);
- The Electrical Equipment in Hazardous Areas (EEHA) Competency Standards Advisory Panel (P12); and
- The Australian Communications Industry Forum (ACIF) – in association with the Australian Communications Authority.

The composition of NECAC will be determined by the Electrotechnology Sector of the National Utilities and Electrotechnology ITAB, and membership may be varied on advice by that sector. The initial composition of NECAC is included in Attachment 1 to this Preface.

The charter of the Group is to monitor, review and maintain the National Electrotechnology Training Package. This charter encompasses the following responsibilities:

- Maintenance of Competency Standards - to initiate and respond to the need to review, vary, delete and to add Unit(s) of Competency, as part of the Sector's standards inventory.

- Maintenance of Competency Delivery Processes and Strategies - to monitor the effectiveness of the delivery of competency and so initiate and respond to issues which may impact on those processes.
- Maintenance of Assessment Guidelines - to monitor the effectiveness of the Assessment Guidelines and supporting systems, to initiate and respond to issues which impact, or are likely to impact, on the quality of the assessment systems and to promote quality improvements throughout the system.
- Maintenance of the Qualifications and Recognition Systems - to monitor the effectiveness of the application of the Qualification and Recognition Systems contained in the Training Package and to review/revise the system as required.
- Evaluating additional or new Unit(s) of Competency for the purpose of their inclusion in the National Electrotechnology Training Package.
- Where the maintenance of this National Training Package leads to changes these will be notified to ANTA. Any changes are to be consistent with the National Training Framework Committee's (NTFC's) policy and changes publicised and published in the Package.

The National Electrotechnology Competency Advisory Council (NECAC) will meet annually to review and plan their management processes. The majority of the considerations by the Council will require prompt response and therefore, business and decisions will normally be handled by electronic/mail means.

4.0 Acknowledgments

The Board of Directors of the National Utilities and Electrotechnology ITAB wishes to acknowledge the important developmental roles played by training advisory and delivery organisations, enterprises, employer and employee representatives, industry practitioners, regulatory authorities and individuals. Without the level of commitment and support received, this National Training Package would not exist. The Board acknowledges and thanks the following:

- The organisations and individuals involved.
- The Chair and Members of the State and Territory Utilities and Electrotechnology Network ITAB's and their various sub-committees.
- The National Electrotechnology Training Advisory Group (NETAG) members.
- The joint EE-Oz Training Standards/Standards Electrical Equipment in Hazardous Areas Competency Advisory Panel (P12) Australia.
- The Electrical Regulatory Advisory Council (ERAC).
- The Australian Communications Industry Forum (ACIC) associated with the Australian Communications Authority.
- Industry Sector practitioners for contributing to and being supportive of the project.

5.0 Conclusion

The National Electrotechnology Training Package has been developed, reviewed and validated through extensive industry consultation. It reflects the views of a wide cross-section of the sector throughout Australia.

Attachment 1

Current Membership of National Electrotechnology Industry Competency Advisory Council

Name	Title	Organisation
Peter Tighe	Chair	EE-Oz Training Standards
Bob Hendricks	State Secretary	CEPU State Branch
Maurice Graham	President	CEPU State Branch
Peter Glynn	Chief Executive Officer	NECA National
James Tinslay	Executive Director	NECA State Chapter
Noel Ryan	Network Representative	State/Territory ITAB Network
Bob Taylor	Network Representative	State/Territory ITAB Network
Ian Neeson	Educational Representative	NETAG
George Davidos	Vocational Education and Training Systems Representative	State Training Authorities
Peter Hannigan	Observer – Industry Specialist	ANTA
Craig Silva	Observer – Project Officer	ANTA
Sean McCormick	Observer – Executive Officer	EPIC Training
Ian Graham	Regulators Representative	Chair of ERAC
Andrew Murley	Standards Australia Committee	Chair of P12
Tony Palladino	Chief Executive Officer	EE-Oz Training Standards
Additional technical representatives were called upon as required		

PART A

COMPETENCY STANDARDS

Part A - Competency Standard

Introduction

1.0 General

National Competency Standards are the benchmark for the National system of vocational education and training.

Through national standards, the industry has established the competencies required for effective performance in employment. Hence, the system is industry led and responsive to its changing skill needs.

A competency comprises the specification of the knowledge and skill, and the application of that knowledge and skill or within an industry, to the standard of performance required in employment.

A competency-based system involves the delivery, assessment and certification of training. It is predicated on the identification and demonstrated attainment of the knowledge, the skills and the application required for effective performance in work. Hence the system is oriented towards outcomes rather than a traditional preoccupation with inputs.

Competency Standards, which are developed by industry parties and subsequently, endorsed by the National Training Framework Committee form the keystone of the national vocational education and training system. The development, endorsement and on-going review of Competency Standards provides a vehicle for industry parties to ensure the integrity and continuing relevance of national vocational education and training, both on and off-the-job.

2.0 Outline of Part A – Competency standards

Information in Part A outlines how the competency standards were developed (in broad terms). The industry coverage they can apply to, as well as the format and construction of the individual units is provided. Matters related to language, literacy and numeracy, access and equity and the regulatory environment in which the units may apply is also included.

There are approximately 97 units of competency included in several volumes.

A glossary of terms is included. The glossary provides a description of those words that are printed in *italics* that appears in the three parts of this document and in particular forms a part of the range statement of each unit. A copy of the glossary has been repeated in front of each of the volumes where the units are located.

The units in the National Electrotechnology Competency Standards have been aligned to and incorporate the Benchmark Electrical/Electronic Cross-Industry Competency Standards.

The units in this National Training Package that relate to Electrical Equipment in Hazardous Areas are aligned to and incorporate the units from the Electrical

Equipment in Hazardous Areas National Competency Standards, previously endorsed by the National Training Framework Committee – Australian National Training Authority. The respective alignment is referred to at the beginning of each unit.

Included in this section is the following:

- An **index** of the units of competency – Enclosure 1
- The **relationship of the units** in the National Electrotechnology Competency Standards to the **Benchmark** Electrical/Electronic **Cross-Industry Competency Standards** – Enclosure 2
- The **relationship** between units of competency and **key competencies** – Enclosure 3
- **Diagrams showing the unit relationships** including the independency and interdependency of units. The units have been placed in groups that would typically relate to a particular or special area of industry need and for ease in recognition of related unit groupings – Enclosure 4
- A **glossary** of terms used in the units – Enclosure 5.

3.0 Development of competency standards for the electrotechnology industry

Draft Generic Electrotechnology Competency Standards were developed prior to 1998 and were utilised as the basis for revision. Consequently, these revised units make up the group of units within this National Training Package. They cover a broad range of knowledge and skills applied in the Electrotechnology industry. The development project satisfied the following characteristics:

- National Utilities and Electrotechnology ITAB and its nation wide focus groups were appropriately representative of the industry throughout Australia.
- development and validation included appropriate consultation processes with a wide range of industry practitioners, providers and government agency representatives.
- the draft standards were distributed throughout the National, State and Territory ITAB network and to industry stakeholders and feedback from other industries was also actively encouraged.
- the competency standards have been subject to further scrutiny during the process of developing the National Training Package.

4.0 Industry coverage

The Australian Standard Classifications of Occupation (ASCO) defines a number of occupations served by this National Training Package.

Electrical and electronics vocations generally cover such work as design, research, assemble, install, construct, diagnose, maintain, commission, program, test or repair of; networks, systems, circuits, equipment, components, appliances, facilities and the like in the fields of electrical, electronics, communications, telecommunications, instrumentation, refrigeration and air conditioning engineering. This includes electricity generation, transmission and distribution.

Most vocations in this group have an entry level of skill commensurate with an AQF Certificate III or higher qualification. In some instances relevant experience is required in addition to a formal qualification. A large body of the skills and knowledge detailed in the competencies within this National Training Package generally reside within the family of Electrotechnology vocations classified and grouped as occupations under ASCO (Australian Standards Classification of Occupation Code) by the Australian Bureau of Statistics (ABS).

Typical groups represented are, as follows:

- 2125 Electrical and Electronics Engineers
- 2128-15 Electrical of Electronics Engineering Technologist
- 2231 Computing Professionals
- 3123 Electrical Engineering Associate Professionals
- 3124 Electronic Engineering Associate Professionals
- 3294 Computing Support Technicians
- 4212 Automotive Electricians
- 4311 Electricians
- 4312 Refrigeration and Airconditioning Mechanics
- 4313 Electrical Distribution Tradespersons
- 4314 Electronic Instrument Tradespersons
- 4315 Electronic and Office Equipment Tradespersons
- 4316 Communications Tradespersons
- 4992-17 Broadcast Transmitter Operator
- 9212 Product Assemblers
- 9918 Electrical and Telecommunications Trades Assistants

The skills and knowledge contained within the National Electrotechnology Training Package competencies is diverse and pervades many areas when analysed in terms of the Australian and New Zealand Standard Industrial Classifications (ANZSIC). In general it embraces the following ANZSIC divisions:

- B Mining
- C Manufacturing
- D Electricity, Gas and Water Supply
- E Construction
- J Communication Services

In particular it is represented in the following specific ANZSIC codes:

- 3610 Electricity Supply
- 4122 Non Building Construction
- 4232 Electrical Services
- 4233 Air Conditioning and Heating Services
- 4234 Fire and Security Systems Services
- 4615 Electrical and Electronic Equipment Wholesaling
- 5261 Household Equipment Repair (Electrical)
- 7823 Consultant Engineering Services

The preceding statements should not be construed as the National Electrotechnology Training Package has having coverage of any particular industry or sector of industry. The intent of the National Electrotechnology Training Package is to describe the skills and knowledge, which pertain to vocations within the field of Electrotechnology, and to offer a choice and range of qualifications or units of competency through appropriate training for organisations, and personnel seeking formal recognition of respective skills and knowledge. It is recognised that other training pathways may exist in the form of other National Training Packages and arrangements.

Notwithstanding, the prime objective of the National Electrotechnology Training Package is to establish the standards of performance in terms of skills and knowledge required for safe, productive and satisfying work covering a range of work activities referred to above. Registered Training Organisations can subsequently develop appropriate industry approved training programs to meet these objectives or indeed to meet other National Training Package objectives. The determining factor will be choice; choice of National Training Package and choice of provider – RTO. Where new apprenticeships apply choice in relation to funding to RTOs will be facilitated by policy enunciated by State and Territory Training Authorities.

5.0 Other industry standards

It is recognised that the National Electrotechnology Industry Standards do not cover all the competencies, which are likely to be required and applied within organisations and workplaces. Nationally endorsed competency standards from other industries can be used where appropriate, provided they are imported in accordance with the criteria outlined in this National Training Package.

6.0 Language, literacy, numeracy and key competencies

The Competency Standards have been written to reflect the technical and operational needs of industry and include appropriate language and literacy requirements.

In general the Key Competencies are embedded within the technical aspects of the industry units and in some instances, the Units of Competency directly address the Key Competencies. The relationship of Key Competencies to industry competencies is shown in the relevant section to this Part - Enclosure 3.

7.0 Access and equity

The knowledge and skills required of employees in the Electrotechnology industry are comprehensive and therefore many and varied employment opportunities are available. The Competency Standards reflect the range of knowledge and skills required and are written in a non-exclusive manner so as to increase the participation rates of equity groups and to minimise unintentional bias.

8.0 Customisation

Refer to Part C – Qualifications of this National Training Package.

9.0 Unit construction

Units of competency that have been successfully completed by learners are to be acknowledged. Some units of competency have been constructed in a manner that will allow reporting without further explanation. However, there are units of competency that have been constructed in a manner that require further explanation for the purposes of reporting the units intended outcome. These units include a reporting statement associated with the explanation. For example the terms used are *Categories* and Endorsements. These statements have been included in recognition of the high degree of commonality in process or function related to elements and performance criteria when applied across the industry irrespective of the required technical knowledge. For instance, *Categories* provide the means of including information in the Evidence Guide of the Units that relate to a particular application and vocational outcome. This type of unit is considered to be several units in one. That is, every *category* within the unit proper represents the equivalence of one unit. Hence a unit with six *Categories*

has six specific outcomes. Additional information is contained within the respective units.

Specialisations also appear in some units. *Specialisations* are a means of providing an internally consistent means of providing flexibility within the structure of the unit without effecting the intended outcome. *Specialisations* in evidence guides provide further discrete or "fine tuning" information relative to a particular *category* and work environment.

Recognition of a specific outcome for a unit that includes *categories* and *specialisation* or *endorsements* requires that all aspects of a selected *category* and requisite *specialisation* or *endorsement* must be completed in order to attribute formal recognition. It should be noted that the *category* and *specialisation* or *endorsement* is affected by, and interrelated with, the selection of same for the requisite Qualifications which are detailed in, and which are to be completed in accordance with Part C – Qualifications of this National Training Package. In particular refer to section 12.3- Qualifications Structure.

Therefore, units that contain *categories, specialisations* or *endorsements* should not be used or interpreted independently from the Qualification selected, as detailed in Part C – Qualifications which requires the nomination of a *specialisation* or *endorsement*.

10.0 Maintenance of competency standards

The Electrotechnology Industry Competency Standards were developed by, and are therefore owned by, the industry. However, it is acknowledged that copyright ownership with respect to this material rests with the Commonwealth.

The Competency Standards must be maintained so that they reflect the ongoing needs of the Electrotechnology Sector and respond in a timely manner to changed technologies and circumstances.

The parties (as detailed in the Preface to this Training Package) who constitute the Electrotechnology Sector of the National Utilities and Electrotechnology ITAB share responsibility for the maintenance of the Competency Standards:

- Competency Standards maintenance will be coordinated and managed by National Utilities and Electrotechnology ITAB.
- suggestions and proposals for changes from all parties are welcome. These should be documented and submitted to National Utilities and Electrotechnology ITAB in accordance with its policies and procedures.

11.0 Assessment guidelines

The National Electrotechnology Industry has developed guidelines for the assessment of these standards. The guidelines are included at Part B – Assessment Guidelines of this Training Package.

12.0 National qualifications

The National Electrotechnology Industry has identified qualifications, which are linked to, and use these competency standards. These are included in Part C – Qualifications of this Training Package.

A list of the qualification titles contained in this Training Package is provided in Part C - Qualifications, Section 3. Included in Part C are, details of the content and composition of the qualifications, the Industry Qualifications Framework, completion requirements and rules for structuring and flexibility arrangements. Additionally, there is a full description provided for each qualification, which explains their application, and gives added meaning to the group of units making up the respective qualification.

13.0 Regulatory requirements - Electrotechnology

Introduction

The Electrotechnology Industry is subject to a high level of regulation and codes of practice related to the assembly, installation and maintenance of parts, components and the control and operation of equipment and apparatus and the like. The regulations and codes of practice are based on the principle of operation of wiring systems and associated circuits involving equipment, apparatus and systems, public safety, safety and health of individuals who work on systems and apparatus/equipment and other codes and practices related to the environment in which they are installed and maintained.

Statutes, regulations and codes of practice

Federal, State and Territory Electricity, Telecommunications, Occupational Health and Safety and Work Cover Acts and Regulations typically cover the Electrotechnology Industry. Additionally, there are many Australian/New Zealand and International Standards, codes of practices and regulations that apply to the Electrotechnology Industry.

Information relevant to the Electrotechnology Sector can be found in the following Internet sites:

- www.standards.org.au
- www.fed.gov.au
- www.nsw.gov.au
- www.qld.gov.au
- www.sa.gov.au
- www.nt.gov.au
- www.act.gov.au
- www.wa.gov.au
- www.tas.gov.au

Other sources of information are also available.

Index of Units of Competency – Enclosure 1

Unit No.	Unit Title
UTE NES001A A	Undertake basic work activities (*Computer Systems*)
UTE NES001B A	Undertake basic work activities (*Electrical*)
UTE NES001C A	Undertake basic work activities (*Electronics*)
UTE NES001D A	Undertake basic work activities (*Instrumentation*)
UTE NES001E A	Undertake basic work activities (*Refrigeration & A/Conditioning*)
UTE NES001FA	Undertake basic work activities (*Data Communications*)
UTE NES002 A	Attend to breakdown
UTE NES003 A	Transport apparatus & materials
UTE NES004 A	Operate plant, machinery & equipment
UTE NES005 A	Co-ordinate materials
UTE NES006 A	Estimate projects
UTE NES007 A	Supply projects
UTE NES008 A	Provide technical leadership in the workplace
UTE NES009 A	Participate in the training of others
UTE NES010 A	Report on the integrity of explosion-protected equipment in hazardous areas
UTE NES011 A	Monitor energy usage in an electrotechnology context
UTE NES012T A	Attend to breakdowns in hazardous areas (*Ex mixed*)
UTE NES012U A	Attend to breakdowns in hazardous areas (*Ex p*)
UTE NES012V A	Attend to breakdowns in hazardous areas (*Dip*)
UTE NES012W A	Attend to breakdowns in hazardous areas (*Ex n*)
UTE NES012X A	Attend to breakdowns in hazardous areas (*Ex i*)
UTE NES012Y A	Attend to breakdowns in hazardous areas (*Ex e*)
UTE NES012Z A	Attend to breakdowns in hazardous areas (*Ex d*)
UTE NES013 A	Monitor a remote area essential services operation
UTE NES014N A	Undertake basic office/warehouse administration (*Administration*)

Unit No.	Unit Title
UTE NES014Q A	Undertake basic office/warehouse administration (*Wholesaling*)
UTE NES015N A	Promote basic organisational services/products (*Administration*)
UTE NES015Q A	Promote basic organisational services/products (*Wholesaling*)
UTE NES016 A	Promote detailed organisational services/products
UTE NES017 A	Project tendering
UTE NES018 A	Assemble & disassemble scaffolding to enable access to the work area
UTE NES019 A	Perform rigging of heavy loads to facilitate placement & the assembly of apparatus
UTE NES020 A	Apply OHS practices in the work place
UTE NES021 A	Solve problems in extra-low voltage single path circuits
UTE NES022 A	Solve problems in multiple path d.c. circuits
UTE NES023 A	Apply contracting and estimating procedures
UTE NES024 A	Document occupational hazards and risks in Electrotechnology
UTE NES025 A	Participate in development and follow a personal competency development plan
UTE NES026 A	Maintain documentation
UTE NES027 A	Source and purchase material/parts for installation or service jobs
UTE NES028 A	Receive and store materials and equipment for electrotechnology work
UTE NES029 A	Provide basic instruction in the use of Electrotechnology apparatus
UTE NES030 A	Participate in fire protection control work and competency development activities
UTE NES031 A	Solve problems in multiple path a.c. circuits
UTE NES032 A	Implement and monitor OHS policies and procedures
UTE NES033 A	Compile and produce an Electrotechnology report

Unit No.	Unit Title
UTE NES038 A	Use drawings, diagrams, schedules and manuals
UTE NES050 A	Identify & select components/accessories/materials for Electrotech work activities
UTE NES051 A	Use of routine equipment/plant/technologies in an Electrotech environment
UTE NES052 A	Interact with customers/clients for quality service
UTE NES053 A	Participate in job data records collection of the business
UTE NES054 A	Produce routine products for carrying out Electrotech work activities
UTE NES055 A	Produce routine tools/devices for carrying out Electrotech work activities
UTE NES056 A	Apply technologies and concepts to Electrotech work activities
UTE NES057 A	Apply computation when using equipment/materials/ concepts in an Electrotech environment
UTE NES058 A	Identify affects of energy on machinery/materials in an Electrotech environment
UTE NES059 A	Identify building techniques, methods and materials used in Electrotech works activities
UTE NES060 A	Carry out routine work activities in an Electrotech environment
UTE NES061 A	Provide basic sustainable energy solutions for energy reduction in domestic premises
UTE NES062 A	Apply sustainable energy practice in daily activities
UTE NES063 A	Contribute to the operation of support plant & equipment used in Electricity Supply
UTE NES064 A	Undertake computations in an Electrotechnology environment
UTE NES065 A	Promote sustainable energy practice in the community
UTE NES101 A	Install pre-assembled neon signs
UTE NES102C A	Assemble & erect antennae & associated hardware (*Electronics*)

Unit No.	Unit Title
UTE NES103B A	Install/maintain piping & tubing (*Electrical*)
UTE NES103E A	Install/maintain piping & tubing (*Refrigeration & A/Conditioning*)
UTE NES104 A	Install & maintain energy management equipment
UTE NES105G A	Install & terminate wiring systems (*Cabling/Wiring Support & Protection*)
UTE NES105H A	Install & terminate wiring systems (*Network Communications*)
UTE NES105I A	Install & terminate wiring systems (*Power & Control – Extra Low Voltage*)
UTE NES105J A	Install & terminate wiring systems (*Power & Control –Low Voltage*)
UTE NES106A A	Install electrical/electronic apparatus (*Computer Systems*)
UTE NES106B A	Install electrical/electronic apparatus (*Electrical*)
UTE NES106C A	Install electrical/electronic apparatus (*Electronics*)
UTE NES106D A	Install electrical/electronic apparatus (*Instrumentation*)
UTE NES106E A	Install electrical/electronic apparatus (*Refrigeration & A/Conditioning*)
UTE NES106F A	Install electrical/electronic apparatus (*Data Communications*)
UTE NES107T A	Install explosion-protected equipment & wiring systems (*Ex mixed*)
UTE NES107U A	Install explosion-protected equipment & wiring systems (*Ex p*)
UTE NES107V A	Install explosion-protected equipment & wiring systems (*Dip*)
UTE NES107W A	Install explosion-protected equipment & wiring systems (*Ex n*)
UTE NES107X A	Install explosion-protected equipment & wiring systems (*Ex i*)
UTE NES107Y A	Install explosion-protected equipment & wiring systems (*Ex e*)
UTE NES107Z A	Install explosion-protected equipment & wiring systems (*Ex d*)
UTE NES108 A	Install overhead communications cables
UTE NES109 A	Install below ground communications cables
UTE NES110 A	Install & maintain fluid measurement equipment

Unit No.	Unit Title
UTE NES111 A	Assembly processes
UTE NES112 A	Install and maintain photovoltaic arrays
UTE NES113 A	Install and maintain a micro-hydro system
UTE NES114 A	Install and maintain a small wind energy conversion system
UTE NES115 A	Install and maintain a grid connected inverter system
UTE NES120 A	Install consumer video systems
UTE NES121 A	Enter and verify operating instructions in microprocessor equipped devices
UTE NES122A	Position and terminate fire detection and warning system apparatus
UTE NES123A	Enter and verify programs in preparation for commissioning fire protection systems
UTE NES201A B	Perform basic repair to electrical/electronic apparatus (*Computer Systems*)
UTE NES201B C	Perform basic repair to electrical/electronic apparatus (*Electrical*)
UTE NES201C B	Perform basic repair to electrical/electronic apparatus (*Electronics*)
UTE NES201E C	Perform basic repair to electrical/electronic apparatus (*Refrigeration & A/Conditioning*)
UTE NES201F B	Perform basic repair to electrical/electronic apparatus (*Data Communications*)
UTE NES202A B	Assemble/disassemble electrical/electronic components (*Computer Systems*)
UTE NES202B C	Assemble/disassemble electrical/electronic components (*Electrical*)
UTE NES202C B	Assemble/disassemble electrical/electronic components (*Electronics*)
UTE NES202E C	Assemble/disassemble electrical/electronic components (*Refrigeration & A/Conditioning*)
UTE NES202F B	Assemble/disassemble electrical/electronic components (*Data Communications*)
UTE NES203B A	Assemble electrical/electronic apparatus (*Electrical*)

Unit No.	Unit Title
UTE NES204 A	Control vegetation
UTE NES205K B	Conduct powerline switching (*Low Voltage Switching*)
UTE NES205L B	Conduct powerline switching (*High Voltage Switching)*
UTE NES205M B	Conduct powerline switching (*System Switching*)
UTE NES206A A	Maintain & repair apparatus & circuits (*Computer Systems*)
UTE NES206B A	Maintain & repair apparatus & circuits (*Electrical*)
UTE NES206C B	Maintain & repair apparatus & circuits (*Electronics*)
UTE NES206D A	Maintain & repair apparatus & circuits (*Instrumentation*)
UTE NES206E A	Maintain & repair apparatus & circuits (*Refrigeration & A/Conditioning*)
UTE NES206F A	Maintain & repair apparatus & circuits (*Data Communications*)
UTE NES207A A	Co-ordinate maintenance of apparatus & systems' circuits (*Computer Systems*)
UTE NES207B A	Co-ordinate maintenance of apparatus & systems' circuits (*Electrical*)
UTE NES207C A	Co-ordinate maintenance of apparatus & systems' circuits (*Electronics*)
UTE NES207D A	Co-ordinate maintenance of apparatus & systems' circuits (*Instrumentation*)
UTE NES207E A	Co-ordinate maintenance of apparatus & systems' circuits (*Refrigeration & A/Conditioning*)
UTE NES208N A	Disconnect & reconnect fixed wired electrical equipment 1,000Vac/1,500Vdc (*Pre-Assembled Neon Signs*)
UTE NES208P B	Disconnect & reconnect fixed wired electrical equipment 1,000Vac/1,500Vdc (*Single Enclosed C/Device*)
UTE NES208Q B	Disconnect & reconnect fixed wired electrical equipment 1,000Vac/1,500Vdc (*Control Devices*)
UTE NES208R B	Disconnect & reconnect fixed wired electrical equipment 1,000Vac/1,500Vdc (*Electrical Heaters)*
UTE NES208S B	Disconnect & reconnect fixed wired electrical equipment 1,000V ac/1,500V dc (*Motors)*
UTE NES209 A	Attach flexible cords & plugs to electrical equipment 250 volt supply

Unit No.	Unit Title
UTE NES210 A	Attach flexible cables & plugs to electrical equipment 1,000Vac/1,500Vdc
UTE NES211 A	Disconnect & reconnect explosion-protected electrical equip. connected fixed wired 1,000Vac/1,500Vdc
UTE NES212 A	Disconnect & re-connect HV electric propulsion components engine driven, earth moving vehicles 3.3kv
UTE NES213 A	Attach flexible cables & plugs to electrical equipment connected to a high voltage supply
UTE NES214T A	Maintain equipment in hazardous areas (*Ex mixed*)
UTE NES214U A	Maintain equipment in hazardous areas (*Ex p*)
UTE NES214V A	Maintain equipment in hazardous areas (*Dip*)
UTE NES214W A	Maintain equipment in hazardous areas (*Ex n*)
UTE NES214X A	Maintain equipment in hazardous areas (*Ex i*)
UTE NES214Y A	Maintain equipment in hazardous areas (*Ex e*)
UTE NES214Z A	Maintain equipment in hazardous areas (*Ex d*)
UTE NES215T A	Overhaul & repair explosion-protected equipment (*Ex mixed*)
UTE NES215U A	Overhaul & repair explosion-protected equipment (*Ex p*)
UTE NES215V A	Overhaul & repair explosion-protected equipment (*Dip*)
UTE NES215W A	Overhaul & repair explosion-protected equipment (*Ex n*)
UTE NES215X A	Overhaul & repair explosion-protected equipment (*Ex i*)
UTE NES215Y A	Overhaul & repair explosion-protected equipment (*Ex e*)
UTE NES215Z A	Overhaul & repair explosion-protected equipment (*Ex d*)
UTE NES216 A	Perform basic servicing to plant/equipment associated with remote area essential services operation
UTE NES217 A	Maintain environmental conditions of a remote area utilities operation
UTE NES218 A	Maintain office records & administrative systems
UTE NES219 A	Co-ordinate maintenance of renewable energy apparatus and systems
UTE NES220 A	Maintain and repair digital televisions
UTE NES301A A	Undertake commissioning of apparatus & circuits (*Computer Systems*)

Unit No.	Unit Title
UTE NES301B A	Undertake commissioning of apparatus & circuits (*Electrical*)
UTE NES301C A	Undertake commissioning of apparatus & circuits (*Electronics*)
UTE NES301D A	Undertake commissioning of apparatus & circuits (*Instrumentation*)
UTE NES301E A	Undertake commissioning of apparatus & circuits (*Refrigeration & A/Conditioning*)
UTE NES301F A	Undertake commissioning of apparatus & circuits (*Data Communications*)
UTE NES302A A	Undertake commissioning of apparatus & complex circuits (*Computer Systems*)
UTE NES302B A	Undertake commissioning of apparatus & complex circuits (*Electrical*)
UTE NES302C A	Undertake commissioning of apparatus & complex circuits (*Electronics*)
UTE NES302D A	Undertake commissioning of apparatus & complex circuits (*Instrumentation*)
UTE NES302E A	Undertake commissioning of apparatus & complex circuits (*Refrigeration & A/Conditioning*)
UTE NES303A A	Undertake commissioning of apparatus & systems' circuits (*Computer Systems*)
UTE NES303B A	Undertake commissioning of apparatus & systems' circuits (*Electrical*)
UTE NES303C A	Undertake commissioning of apparatus & systems' circuits (*Electronics*)
UTE NES303D A	Undertake commissioning of apparatus & systems' circuits (*Instrumentation*)
UTE NES303E A	Undertake commissioning of apparatus & systems' circuits (*Refrigeration & A/Conditioning*)
UTE NES304A A	Undertake commissioning of advanced systems & apparatus *(Computer Systems)*
UTE NES304B A	Undertake commissioning of advanced systems & apparatus (*Electrical*)
UTE NES304C A	Undertake commissioning of advanced systems & apparatus (*Electronics*)
UTE NES304D A	Undertake commissioning of advanced systems & apparatus (*Instrumentation*)

Unit No.	Unit Title
UTE NES305 A	Undertake commissioning procedures of renewable energy apparatus and systems
UTE NES306A	Commission commercial fire protection systems
UTE NES401A B	Perform functional apparatus checks (*Computer Systems*)
UTE NES401B C	Perform functional apparatus checks (*Electrical*)
UTE NES401C B	Perform functional apparatus checks (*Electronics*)
UTE NES401E C	Perform functional apparatus checks (*Refrigeration & A/Conditioning*)
UTE NES401F B	Perform functional apparatus checks (*Data Communications*)
UTE NES402A A	Test apparatus & circuits (*Computer Systems*)
UTE NES402B A	Test apparatus & circuits (*Electrical*)
UTE NES402C A	Test apparatus & circuits (*Electronics*)
UTE NES402D A	Test apparatus & circuits (*Instrumentation*)
UTE NES402E A	Test apparatus & circuits (*Refrigeration & A/Conditioning*)
UTE NES402F A	Test apparatus & circuits (*Data Communications*)
UTE NES403A A	Test apparatus & complex circuits (*Computer Systems*)
UTE NES403B A	Test apparatus & complex circuits (*Electrical*)
UTE NES403C A	Test apparatus & complex circuits (*Electronics*)
UTE NES403D A	Test apparatus & complex circuits (*Instrumentation*)
UTE NES403E A	Test apparatus & complex circuits (*Refrigeration & A/Conditioning*)
UTE NES404A A	Assess electrical/electronic apparatus (*Computer Systems*)
UTE NES404B A	Assess electrical/electronic apparatus (*Electrical*)
UTE NES404C A	Assess electrical/electronic apparatus (*Electronics*)
UTE NES404D A	Assess electrical/electronic apparatus (*Instrumentation*)
UTE NES404E A	Assess electrical/electronic apparatus (*Refrigeration & A/Conditioning*)
UTE NES405 B	Inspect/investigate electrical apparatus and associated circuits
UTE NES406A A	Develop complex testing & evaluation procedures (*Computer Systems*)
UTE NES406B A	Develop complex testing & evaluation procedures (*Electrical*)

Unit No.	Unit Title
UTE NES406C A	Develop complex testing & evaluation procedures (*Electronics*)
UTE NES406D A	Develop complex testing & evaluation procedures (*Instrumentation*)
UTE NES407T A	Assess explosion-protected equipment for conformance with standards(*Ex mixed*)
UTE NES407U A	Assess explosion-protected equipment for conformance with standards(*Ex p*)
UTE NES407V A	Assess explosion-protected equipment for conformance with standards(*Dip*)
UTE NES407W A	Assess explosion-protected equipment for conformance with standards(*Ex n*)
UTE NES407X A	Assess explosion-protected equipment for conformance with standards(*Ex i*)
UTE NES407Y A	Assess explosion-protected equipment for conformance with standards(*Ex e*)
UTE NES407Z A	Assess explosion-protected equipment for conformance with standards(*Ex d*)
UTE NES408T A	Test installations in hazardous areas (*Ex mixed*)
UTE NES408U A	Test installations in hazardous areas (*Ex p*)
UTE NES408V A	Test installations in hazardous areas (*Dip*)
UTE NES408W A	Test installations in hazardous areas (*Ex n*)
UTE NES408X A	Test installations in hazardous areas (*Ex i*)
UTE NES408Y A	Test installations in hazardous areas (*Ex e*)
UTE NES408Z A	Test installations in hazardous areas (*Ex d*)
UTE NES409T A	Inspect visually existing hazardous area installations (*Ex mixed*)
UTE NES409U A	Inspect visually existing hazardous area installations (*Ex p*)
UTE NES409V A	Inspect visually existing hazardous area installations (*Dip*)
UTE NES409W A	Inspect visually existing hazardous area installations (*Ex n*)
UTE NES409X A	Inspect visually existing hazardous area installations (*Ex i*)
UTE NES409Y A	Inspect visually existing hazardous area installations (*Ex e*)
UTE NES409Z A	Inspect visually existing hazardous area installations (*Ex d*)
UTE NES410T A	Inspect in detail hazardous area installations (*Ex mixed*)

Unit No.	Unit Title
UTE NES410U A	Inspect in detail hazardous area installations (*Ex p*)
UTE NES410V A	Inspect in detail hazardous area installations (*Dip*)
UTE NES410W A	Inspect in detail hazardous area installations (*Ex n*)
UTE NES410X A	Inspect in detail hazardous area installations (*Ex i*)
UTE NES410Y A	Inspect in detail hazardous area installations (*Ex e*)
UTE NES410Z A	Inspect in detail hazardous area installations (*Ex d*)
UTE NES411 A	Assess renewable energy apparatus and systems
UTE NES412 A	Test renewable energy apparatus and systems
UTE NES413 A	Reduce the energy consumption within a building
UTE NES414 A	Program and verify programmable controllers
UTE NES415 A	Program and verify programmable controller systems
UTE NES416 A	Verify compliance and functionality of fire protection installations
UTE NES501A A	Diagnose & rectify faults in apparatus & circuits (*Computer Systems*)
UTE NES501B A	Diagnose & rectify faults in apparatus & circuits (*Electrical*)
UTE NES501C A	Diagnose & rectify faults in apparatus & circuits (*Electronics*)
UTE NES501D A	Diagnose & rectify faults in apparatus & circuits (*Instrumentation*)
UTE NES501E A	Diagnose & rectify faults in apparatus & circuits (*Refrigeration & A/Conditioning*)
UTE NES501F A	Diagnose & rectify faults in apparatus & circuits (*Data Communications*)
UTE NES502A A	Diagnose & rectify faults in apparatus & complex circuits (*Computer Systems*)
UTE NES502B A	Diagnose & rectify faults in apparatus & complex circuits (*Electrical*)
UTE NES502C A	Diagnose & rectify faults in apparatus & complex circuits (*Electronics*)
UTE NES502D A	Diagnose & rectify faults in apparatus & complex circuits (*Instrumentation*)
UTE NES502E A	Diagnose & rectify faults in apparatus & complex circuits (*Refrigeration & A/Conditioning*)

Unit No.	Unit Title
UTE NES503A A	Diagnose & rectify faults in apparatus & systems' circuits (*Computer Systems*)
UTE NES503B A	Diagnose & rectify faults in apparatus & systems' circuits (*Electrical*)
UTE NES503C A	Diagnose & rectify faults in apparatus & systems' circuits (*Electronics*)
UTE NES503D A	Diagnose & rectify faults in apparatus & systems' circuits (*Instrumentation*)
UTE NES503E A	Diagnose & rectify faults in apparatus & systems' circuits (*Refrigeration & A/Conditioning*)
UTE NES504A A	Diagnose & rectify faults in advanced systems & apparatus (*Computer Systems*)
UTE NES504B A	Diagnose & rectify faults in advanced systems & apparatus (*Electrical*)
UTE NES504C A	Diagnose & rectify faults in advanced systems & apparatus (*Electronics*)
UTE NES504D A	Diagnose & rectify faults in advanced systems & apparatus (*Instrumentation*)
UTE NES505N B	Locate & rectify fault(s) in electrical equip 1kVac/1.5kVdc by procedures (*Pre-Assembled Neon Signs*)
UTE NES505P B	Locate & rectify fault(s) in electrical equip 1kVac/1.5kVdc by procedures (*Single Enclosed C/Device*)
UTE NES505Q B	Locate & rectify fault(s) in electrical equipment 1kVac/1.5kVdc by procedures (*Control Devices*)
UTE NES505R B	Locate & rectify fault(s) in electrical equipment 1kVac/1.5kVdc by procedures (*Electrical Heaters)*
UTE NES505S B	Locate & rectify fault(s) in electrical equipment 1kVac/1.5kVdc by procedures (*Motors)*
UTE NES506 A	Diagnose and rectify faults in renewable energy apparatus and systems
UTE NES507 A	Evaluate performance of motor control systems
UTE NES508 A	Find and repair faults in fire protection systems
UTE NES601 A	Co-ordinate the work of others
UTE NES602A A	Develop commissioning programs for apparatus & circuits (*Computer Systems*)

Unit No.	Unit Title
UTE NES602B A	Develop commissioning programs for apparatus & circuits (*Electrical*)
UTE NES602C A	Develop commissioning programs for apparatus & circuits (*Electronics*)
UTE NES602D A	Develop commissioning programs for apparatus & circuits (*Instrumentation*)
UTE NES603A A	Develop maintenance programs for apparatus & circuits (*Computer Systems*)
UTE NES603B A	Develop maintenance programs for apparatus & circuits (*Electrical*)
UTE NES603C A	Develop maintenance programs for apparatus & circuits (*Electronics*)
UTE NES603D A	Develop maintenance programs for apparatus & circuits (*Instrumentation*)
UTE NES604A A	Co-ordinate & manage commissioning processes (*Computer Systems*)
UTE NES604B A	Co-ordinate & manage commissioning processes (*Electrical*)
UTE NES604C A	Co-ordinate & manage commissioning processes (*Electronics*)
UTE NES604D A	Co-ordinate & manage commissioning processes (*Instrumentation*)
UTE NES604E A	Co-ordinate & manage commissioning processes (*Refrigeration & A/Conditioning)*
UTE NES605A A	Co-ordinate & manage routine maintenance (*Computer Systems*)
UTE NES605B A	Co-ordinate & manage routine maintenance (*Electrical*)
UTE NES605C A	Co-ordinate & manage routine maintenance (*Electronics*)
UTE NES605D A	Co-ordinate & manage routine maintenance (*Instrumentation*)
UTE NES605E A	Co-ordinate & manage routine maintenance (*Refrigeration & A/Conditioning*)
UTE NES606A A	Co-ordinate & manage installation projects (*Computer Systems*)
UTE NES606B A	Co-ordinate & manage installation projects (*Electrical*)
UTE NES606C A	Co-ordinate & manage installation projects (*Electronics*)
UTE NES606D A	Co-ordinate & manage installation projects (*Instrumentation*)
UTE NES606E A	Co-ordinate & manage installation projects (*Refrigeration & A/Conditioning*)

Unit No.	Unit Title
UTE NES607 A	Develop & apply electrotechnology contracting business plans
UTE NES608 A	Apply electrotechnology contracting business practices
UTE NES609T A	Develop & manage maintenance programs for hazardous area electrical equipment (*Ex mixed*)
UTE NES609U A	Develop & manage maintenance programs for hazardous area electrical equipment (*Ex p*)
UTE NES609V A	Develop & manage maintenance programs for hazardous area electrical equipment (*Dip*)
UTE NES609W A	Develop & manage maintenance programs for hazardous area electrical equipment (*Ex n*)
UTE NES609X A	Develop & manage maintenance programs for hazardous area electrical equipment (*Ex i*)
UTE NES609Y A	Develop & manage maintenance programs for hazardous area electrical equipment (*Ex e*)
UTE NES609Z A	Develop & manage maintenance programs for hazardous area electrical equipment (*Ex d*)
UTE NES610 A	Ensure the safety of hazardous areas
UTE NES701A A	Redesign & develop modifications to apparatus & systems' circuits (*Computer Systems*)
UTE NES701B A	Redesign & develop modifications to apparatus & systems' circuits (*Electrical*)
UTE NES701C A	Redesign & develop modifications to apparatus & systems' circuits (*Electronics*)
UTE NES701D A	Redesign & develop modifications to apparatus & systems' circuits (*Instrumentation*)
UTE NES701E A	Redesign & develop modifications to apparatus & systems' circuits (*Refrigeration & A/Conditioning*)
UTE NES702A A	Design electrical/electronic apparatus & systems (*Computer Systems*)
UTE NES702B A	Design electrical/electronic apparatus & systems (*Electrical*)
UTE NES702C A	Design electrical/electronic apparatus & systems (*Electronics*)
UTE NES702D A	Design electrical/electronic apparatus & systems (*Instrumentation*)
UTE NES703A A	Plan installation of electrotech apparatus & wiring/piping systems (*Computer Systems*)

Unit No.	Unit Title
UTE NES703B A	Plan installation of electrotech apparatus & wiring/piping systems (*Electrical*)
UTE NES703C A	Plan installation of electrotech apparatus & wiring/piping systems (*Electronics*)
UTE NES703D A	Plan installation of electrotech apparatus & wiring/piping systems (*Instrumentation*)
UTE NES703E A	Plan installation of electrotech apparatus & wiring/piping systems (*Refrigeration & A/Conditioning*)
UTE NES704 A	Plan illumination systems
UTE NES705T A	Design & develop modifications to explosion-protected equipment (*Ex mixed*)
UTE NES705U A	Design & develop modifications to explosion-protected equipment (*Ex p*)
UTE NES705V A	Design & develop modifications to explosion-protected equipment (*Dip*)
UTE NES705W A	Design & develop modifications to explosion-protected equipment (*Ex n*)
UTE NES705X A	Design & develop modifications to explosion-protected equipment (*Ex i*)
UTE NES705Y A	Design & develop modifications to explosion-protected equipment (*Ex e*)
UTE NES705Z A	Design & develop modifications to explosion-protected equipment (*Ex d*)
UTE NES706 A	Classify hazardous areas
UTE NES707T A	Design electrical installations in hazardous areas (*Ex mixed*)
UTE NES707U A	Design electrical installations in hazardous areas (*Ex p*)
UTE NES707V A	Design electrical installations in hazardous areas (*Dip*)
UTE NES707W A	Design electrical installations in hazardous areas (*Ex n*)
UTE NES707X A	Design electrical installations in hazardous areas (*Ex i*)
UTE NES707Y A	Design electrical installations in hazardous areas (*Ex e*)
UTE NES707Z A	Design electrical installations in hazardous areas (*Ex d*)
UTE NES708T A	Design explosion-protected electrical systems (*Ex mixed*)
UTE NES708U A	Design explosion-protected electrical systems (*Ex p*)
UTE NES708V A	Design explosion-protected electrical systems (*Dip*)
UTE NES708W A	Design explosion-protected electrical systems (*Ex n*)

Unit No.	Unit Title
UTE NES708X A	Design explosion-protected electrical systems (*Ex i*)
UTE NES708Y A	Design explosion-protected electrical systems (*Ex e*)
UTE NES708Z A	Design explosion-protected electrical systems (*Ex d*)
UTE NES709 A	Design a renewable energy system
UTE NES710 A	Plan the installation of renewable energy apparatus and systems

Relationship of the units in the National Electrotechnology Competency Standards to the Benchmark Electrical/Electronic Cross-Industry Competency Standards – Enclosure 2

National Electrotechnology Competency Standards		**Benchmark Electrical/Electronic Cross Industry Competency Standards**	
Unit no	**Unit title**	**Unit no**	**Unit title**
UTE NES102A	Assemble & erect antennae & associated hardware	EBS102	Assemble and erect antennae and associated hardware
UTE NES105 A	Install & terminate wiring systems	EBS204	Install and terminate wiring systems
UTE NES106 A	Install electrical/ electronic apparatus	EBS205	Install electrical/electronic apparatus
UTE NES203 A	Assemble electrical/ electronic apparatus	EBS202	Assemble distribution and control panels
UTE NES205 B	Conduct powerline switching	EBS650	Conduct powerline switching
UTE NES206 B	Maintain & repair apparatus & associated circuits	EBS406	Maintain and repair apparatus and associated circuits
UTE NES207 A	Co-ordinate maintenance of apparatus & associated systems' circuits	EBS407	Co-ordinate maintenance of apparatus and associated systems' circuits
UTE NES208 B	Disconnect & reconnect fixed wired electrical equipment connected to supply up to 1,000 volts A.C. or 1,500 volts D.C.	EBS701	Apply Occupation Health and Safety requirements associated with restricted electrical work
		EBS702	Disconnect and reconnect fixed wired electrical equipment which is connected to a supply up to 650 volts
UTE NES209 A	Attach flexible cords & plugs to electrical equipment connected to a single phase 250 volt supply	EBS705	Attach flexible cords and plugs to equipment connected to a single phase 250 volt supply

National Electrotechnology Competency Standards		**Benchmark Electrical/Electronic Cross Industry Competency Standards**	
Unit no	**Unit title**	**Unit no**	**Unit title**
UTE NES210 A	Attach flexible cords & plugs to electrical equipment connected to a supply up to 1,000 volts A.C. or 1,500 volts D.C.	EBS706	Attach flexible cable and plug to equipment connected to a supply up to 650 volts
UTE NES211 A	Disconnect & reconnect explosion-protected electrical equipment connected to fixed wired supply up to 1,000 volts A.C. or 1,500 volts D.C.	EBS707	Disconnect and reconnect explosion-protected equipment connected to supplies
UTE NES212 A	Disconnection & re-connection of HV Electric Propulsion Components on Engine Driven, Self-Propelled Earth Moving Vehicles, operating at 3,300 volts	EBS708	Disconnection and re-connection of HV Electric Propulsion Components on Engine Driven, Self-Propelled Earth Moving Vehicles, operating at 3,300 volts
UTE NES301 A	Undertake commissioning procedures of apparatus & associated circuits	EBS305	Undertake commissioning procedures of apparatus and associated circuits
UTE NES302 A	Undertake commissioning procedures of apparatus & associated complex circuits	EBS306	Undertake commissioning procedures of apparatus and associated complex circuits
UTE NES303 A	Undertake commissioning procedures of apparatus & associated systems' circuits	EBS307	Undertake commissioning procedures of apparatus and associated systems' circuits
UTE NES401 D	Perform functional apparatus checks	EBS301	Perform functional apparatus checks
UTE NES402 A	Test apparatus & circuits	EBS302	Test apparatus and circuits
UTE NES403 A	Test apparatus & complex circuits	EBS303	Test apparatus and complex circuits
UTE NES404 A	Assess electrical/electronic apparatus	EBS304	Assess performance of apparatus and associated systems' circuits
UTE NES405 B	Inspect/investigate electrical apparatus and associated circuits (Part)	EBS308	Inspect electrical apparatus and associated circuits

National Electrotechnology Competency Standards		**Benchmark Electrical/Electronic Cross Industry Competency Standards**	
Unit no	**Unit title**	**Unit no**	**Unit title**
UTE NES501 A	Diagnose & rectify faults in apparatus & associated circuits	EBS402	Diagnose faults in apparatus and associated circuits
UTE NES502 A	Diagnose & rectify faults in apparatus & associated complex circuits	EBS403	Diagnose faults in apparatus and complex circuits
UTE NES503 A	Diagnose & rectify faults in apparatus & associated systems' circuits	EBS404	Diagnose faults in apparatus and associated systems' circuits
UTE NES505 B	Locate & rectify fault(s) in electrical equipment intended to operate to a connected fixed wired supply up to 1,000 volts A.C. or 1,500 volts D.C. following prescribed procedures	EBS703	Locate and rectify faults in equipment connected to a single phase 250 volt supply
		EBS704	Locate and rectify faults in equipment connected to supply up to 650 volts
UTE NES602 A	Develop commissioning programs for apparatus & associated circuits	EBS613	Develop commissioning programs for apparatus and associated circuits
UTE NES603 A	Develop maintenance programs for apparatus & associated circuits	EBS614	Develop maintenance programs for apparatus and associated circuits
UTE NES701 A	Redesign & develop modifications to apparatus & associated systems' circuits	EBS501	Design and develop modifications to apparatus and systems
UTE NES702 A	Design electrical/electronic apparatus & systems	EBS502	Design electrical/electronic apparatus and systems
UTE NES703 A	Plan the installation of electrical/electronic apparatus & associated wiring/piping systems	EBS607	Establish capacity, load and duty of apparatus and circuits specified for an installation

Relationship between Units of Competency and Key Competencies – Enclosure 3

The Key Competencies:

A Collecting, analysing and organising information

The capacity to locate information, sift and sort information in order to select what is required and present it in a useful way, and evaluate both the information itself and the source and methods used to obtain it.

B Communicating ideas and information

The capacity to communicate effectively with others using the range of spoken, written, graphic and other non-verbal means of expression.

C Planning and organising activities

The capacity to plan and organise one's own work activities, including making good use of time and resources, sorting out priorities and monitoring one's own performance.

D Working with others and in teams

The capacity to interact effectively with other people both on a one-to-one basis and in groups, including understanding and responding to the needs of a client and working effectively as a member of a team to achieve a shared goal.

E Using mathematical ideas and techniques

The capacity to use mathematical ideas, such as number and space, and techniques, such as estimation and approximation, for practical purposes.

F Solving problems

The capacity to apply problem-solving strategies in purposeful ways, both in situations where the problem and the desired solution are clearly evident and in situations requiring critical thinking and a creative approach to achieve an outcome.

G Using technology

The capacity to apply technology, combining the physical and sensory skills needed to operate equipment with the understanding of scientific and technological principles needed to explore and adapt systems.

Performance levels:

Performance Level 1 describes the competence needed to undertake activities efficiently and with sufficient self-management to meet the explicit requirements of the activity and to make judgments about quality of outcome against established criteria.

Performance Level 2 describes the competence needed to manage activities requiring the selection, application and integration of a number of elements, and to select from established criteria to judge quality of process and outcome.

Performance Level 3 describes the competence needed to evaluate and reshape processes, to establish and use principles in order to determine appropriate ways of approaching activities, and to establish criteria for judging quality of process and outcome.

Matrix showing the relationship between the Units and Key Competencies

Note: The numbers (1, 2, 3) in the columns indicate the performance level.

Unit	Unit of Competency Title	Key Competency						
		A	**B**	**C**	**D**	**E**	**F**	**G**
UTE NES001A A	Undertake basic work activities (*Computer Systems*)	1	1	1	1	1	1	1
UTE NES001B A	Undertake basic work activities (*Electrical*)	1	1	1	1	1	1	1
UTE NES001C A	Undertake basic work activities (*Electronics*)	1	1	1	1	1	1	1
UTE NES001D A	Undertake basic work activities (*Instrumentation*)	1	1	1	1	1	1	1
UTE NES001E A	Undertake basic work activities (*Refrigeration & A/Conditioning*)	1	1	1	1	1	1	1
UTE NES001FA	Undertake basic work activities (*Data Communications*)	1	1	1	1	1	1	1
UTE NES002 A	Attend to breakdown	1	1	2	2	1	2	1
UTE NES003 A	Transport apparatus & materials	1	1	1	1	1	1	1
UTE NES004 A	Operate plant, machinery & equipment	1	1	1	1	1	1	1
UTE NES005 A	Co-ordinate materials	1	1	1	1	1	1	1
UTE NES006 A	Estimate projects	2	1	2	1	2	2	2
UTE NES007 A	Supply projects	2	1	2	1	2	1	1

Unit	Unit of Competency Title	Key Competency						
		A	**B**	**C**	**D**	**E**	**F**	**G**
UTE NES008 A	Provide technical leadership in the workplace	3	1	3	1	3	1	1
UTE NES009 A	Participate in the training of others	2	1	2	1	1	2	1
UTE NES010 A	Report on the integrity of explosion-protected equipment in hazardous areas	2	2	1	1	1	1	1
UTE NES011 A	Monitor energy usage in an electrotechnology context	1	1	1	1	1	1	1
UTE NES012T A	Attend to breakdowns in hazardous areas (*Ex mixed*)	1	1	2	2	1	2	1
UTE NES012U A	Attend to breakdowns in hazardous areas (*Ex p*)	1	1	2	2	1	2	1
UTE NES012V A	Attend to breakdowns in hazardous areas (*Dip*)	1	1	2	2	1	2	1
UTE NES012W A	Attend to breakdowns in hazardous areas (*Ex n*)	1	1	2	2	1	2	1
UTE NES012X A	Attend to breakdowns in hazardous areas (*Ex i*)	1	1	2	2	1	2	1
UTE NES012Y A	Attend to breakdowns in hazardous areas (*Ex e*)	1	1	2	2	1	2	1
UTE NES012Z A	Attend to breakdowns in hazardous areas (*Ex d*)	1	1	2	2	1	2	1
UTE NES013 A	Monitor a remote area essential services operation	1	1	1	1	1	1	1
UTE NES014N A	Undertake basic office/warehouse administration (*Administration*)	1	1	1	1	1	1	1
UTE NES014Q A	Undertake basic office/warehouse administration (*Wholesaling*)	1	1	1	1	1	1	1
UTE NES015N A	Promote basic organisational services/products (*Administration*)	1	1	1	1	1	1	1
UTE NES015Q A	Promote basic organisational services/products (*Wholesaling*)	1	1	1	1	1	1	1
UTE NES016 A	Promote detailed organisational services/products	1	1	1	1	1	1	1

Unit	Unit of Competency Title	Key Competency						
		A	**B**	**C**	**D**	**E**	**F**	**G**
UTE NES017 A	Project tendering	1	1	1	1	1	1	1
UTE NES018 A	Assemble & disassemble scaffolding to enable access to the work area	1	1	1	1	1	1	1
UTE NES019 A	Perform rigging of heavy loads to facilitate placement & the assembly of apparatus	1	1	1	1	1	1	1
UTE NES020 A	Apply OHS practices in the work place	1	1	1	1	1	1	1
UTE NES021 A	Solve problems in extra-low voltage single path circuits	1	2	2	2	2	2	1
UTE NES022 A	Solve problems in multiple path d.c. circuits	1	2	2	2	2	2	1
UTE NES023 A	Apply contracting and estimating procedures	1	1	1	1	1	1	1
UTE NES024 A	Document occupational hazards and risks in Electrotechnology	2	2	2	2	2	1	1
UTE NES025 A	Participate in development and follow a personal competency development plan	1	1	1	1	1	1	1
UTE NES026 A	Maintain documentation	2	2	2	2	2	2	1
UTE NES027 A	Source and purchase material/parts for installation or service jobs	1	1	1	1	1	1	1
UTE NES028 A	Receive and store materials and equipment for electrotechnology work	1	1	1	1	1	1	1
UTE NES029 A	Provide basic instruction in the use of Electrotechnology apparatus	1	2	1	1	1	1	1
UTE NES030 A	Participate in fire protection control work and competency development activities	1	1	1	1	1	1	1

Unit	Unit of Competency Title	Key Competency						
		A	**B**	**C**	**D**	**E**	**F**	**G**
UTE NES031 A	Solve problems in multiple path a.c. circuits	1	2	2	2	2	2	1
UTE NES032 A	Implement and monitor OHS policies and procedures	2	2	2	2	2	2	1
UTE NES033 A	Compile and produce an Electrotechnology report	2	2	2	2	2	2	1
UTE NES038 A	Use drawings, diagrams, schedules and manuals	1	1	1	1	1	2	1
UTE NES050 A	Identify & select components/accessories/materials for Electrotech work activities	1	1	1	1	1	1	1
UTE NES051 A	Use of routine equipment/plant/technologies in an Electrotech environment	1	1	1	1	1	1	1
UTE NES052 A	Interact with customers/clients for quality service	1	1	1	1	1	1	1
UTE NES053 A	Participate in job data records collection of the business	1	1	1	1	1	1	1
UTE NES054 A	Produce routine products for carrying out Electrotech work activities	1	1	1	1	1	1	1
UTE NES055 A	Produce routine tools/devices for carrying out Electrotech work activities	1	1	1	1	1	1	1
UTE NES056 A	Apply technologies and concepts to Electrotech work activities	1	1	1	1	1	1	1
UTE NES057 A	Apply computation when using equipment/materials/ concepts in an Electrotech environment	1	1	1	1	1	1	1
UTE NES058 A	Identify affects of energy on machinery/materials in an Electrotech environment	1	1	1	1	1	1	1
UTE NES059 A	Identify building techniques, methods and materials used in Electrotech works activities	1	1	1	1	1	1	1

Unit	Unit of Competency Title	Key Competency						
		A	**B**	**C**	**D**	**E**	**F**	**G**
UTE NES060 A	Carry out routine work activities in an Electrotech environment	1	1	1	1	1	1	1
UTE NES061 A	Provide basic sustainable energy solutions for energy reduction in domestic premises	1	1	1	1	1	1	1
UTE NES062 A	Apply sustainable energy practice in daily activities	1	1	1	1	1	1	1
UTE NES063 A	Contribute to the operation of support plant & equipment used in Electricity Supply	1	1	1	1	1	1	1
UTE NES064 A	Undertake computations in an Electrotechnology environment	1	1	1	1	1	1	1
UTE NES065 A	Promote sustainable energy practice in the community	1	1	1	1	1	1	1
UTE NES101 A	Install pre-assembled neon signs	1	1	1	1	1	1	1
UTE NES102C A	Assemble & erect antennae & associated hardware (*Electronics*)	1	1	1	1	1	1	1
UTE NES103B A	Install/maintain piping & tubing (*Electrical*)	1	1	1	1	1	1	1
UTE NES103E A	Install/maintain piping & tubing (*Refrigeration & A/Conditioning*)	1	1	1	1	1	1	1
UTE NES104 A	Install & maintain energy management equipment	1	1	1	1	1	1	1
UTE NES105G A	Install & terminate wiring systems (*Cabling/Wiring Support & Protection*)	1	1	1	1	1	1	1
UTE NES105H A	Install & terminate wiring systems (*Network Communications*)	1	1	1	1	1	1	1
UTE NES105I A	Install & terminate wiring systems (*Power & Control – Extra Low Voltage*)	1	1	1	1	1	1	1
UTE NES105J A	Install & terminate wiring systems (*Power & Control –Low Voltage*)	1	1	1	1	1	1	1

Unit	Unit of Competency Title	Key Competency						
		A	**B**	**C**	**D**	**E**	**F**	**G**
UTE NES106A A	Install electrical/electronic apparatus (*Computer Systems*)	1	1	1	1	1	1	1
UTE NES106B A	Install electrical/electronic apparatus (*Electrical*)	1	1	1	1	1	1	1
UTE NES106C A	Install electrical/electronic apparatus (*Electronics*)	1	1	1	1	1	1	1
UTE NES106D A	Install electrical/electronic apparatus (*Instrumentation*)	1	1	1	1	1	1	1
UTE NES106E A	Install electrical/electronic apparatus (*Refrigeration & A/Conditioning*)	1	1	1	1	1	1	1
UTE NES106F A	Install electrical/electronic apparatus (*Data Communications*)	1	1	1	1	1	1	1
UTE NES107T A	Install explosion-protected equipment & wiring systems (*Ex mixed*)	2	1	1	1	1	1	1
UTE NES107U A	Install explosion-protected equipment & wiring systems (*Ex p*)	2	1	1	1	1	1	1
UTE NES107V A	Install explosion-protected equipment & wiring systems (*Dip*)	2	1	1	1	1	1	1
UTE NES107W A	Install explosion-protected equipment & wiring systems (*Ex n*)	2	1	1	1	1	1	1
UTE NES107X A	Install explosion-protected equipment & wiring systems (*Ex i*)	2	1	1	1	1	1	1
UTE NES107Y A	Install explosion-protected equipment & wiring systems (*Ex e*)	2	1	1	1	1	1	1
UTE NES107Z A	Install explosion-protected equipment & wiring systems (*Ex d*)	2	1	1	1	1	1	1
UTE NES108 A	Install overhead communications cables	1	1	1	1	1	1	1
UTE NES109 A	Install below ground communications cables	1	1	1	1	1	1	1

Unit	Unit of Competency Title	Key Competency						
		A	**B**	**C**	**D**	**E**	**F**	**G**
UTE NES110 A	Install & maintain fluid measurement equipment	2	1	1	1	1	1	1
UTE NES111 A	Assembly processes	1	1	1	1	1	1	1
UTE NES112 A	Install and maintain photovoltaic arrays	1	1	1	1	1	1	1
UTE NES113 A	Install and maintain a micro-hydro system	1	1	1	1	1	1	1
UTE NES114 A	Install and maintain a small wind energy conversion system	1	1	1	1	1	1	1
UTE NES115 A	Install and maintain a grid connected inverter system	1	1	1	1	1	1	1
UTE NES120 A	Install consumer video systems	1	1	1	1	1	1	1
UTE NES121 A	Enter and verify operating instructions in microprocessor equipped devices	2	2	2	2	2	2	2
UTE NES122 A	Position and terminate fire detection and warning system apparatus	1	1	1	1	1	1	1
UTE NES123 A	Enter and verify programs in preparation for commissioning fire protection systems	1	2	2	2	2	2	2
UTE NES201A B	Perform basic repair to electrical/electronic apparatus (*Computer Systems*)	1	1	1	1	1	1	1
UTE NES201B C	Perform basic repair to electrical/electronic apparatus (*Electrical*)	1	1	1	1	1	1	1
UTE NES201C B	Perform basic repair to electrical/electronic apparatus (*Electronics*)	1	1	1	1	1	1	1
UTE NES201E C	Perform basic repair to electrical/electronic apparatus (*Refrigeration & A/Conditioning*)	1	1	1	1	1	1	1

Unit	Unit of Competency Title	Key Competency						
		A	**B**	**C**	**D**	**E**	**F**	**G**
UTE NES201F B	Perform basic repair to electrical/electronic apparatus (*Data Communications*)	1	1	1	1	1	1	1
UTE NES202A B	Assemble/disassemble electrical/electronic components (*Computer Systems*)	1	1	1	1	1	1	1
UTE NES202B C	Assemble/disassemble electrical/electronic components (*Electrical*)	1	1	1	1	1	1	1
UTE NES202C B	Assemble/disassemble electrical/electronic components (*Electronics*)	1	1	1	1	1	1	1
UTE NES202E C	Assemble/disassemble electrical/electronic components (*Refrigeration & A/Conditioning*)	1	1	1	1	1	1	1
UTE NES202F B	Assemble/disassemble electrical/electronic components (*Data Communications*)	1	1	1	1	1	1	1
UTE NES203B A	Assemble electrical/electronic apparatus (*Electrical*)	1	1	1	1	1	1	1
UTE NES204 A	Control vegetation	1	1	1	1	1	1	1
UTE NES205K B	Conduct powerline switching (*Low Voltage Switching*)	2	2	2	2	1	1	1
UTE NES205L B	Conduct powerline switching (*High Voltage Switching)*	2	2	2	2	1	1	1
UTE NES205M B	Conduct powerline switching (*System Switching*)	2	2	2	2	1	1	1
UTE NES206A A	Maintain & repair apparatus & circuits (*Computer Systems*)	1	1	1	1	1	1	1
UTE NES206B A	Maintain & repair apparatus & circuits (*Electrical*)	1	1	1	1	1	1	1
UTE NES206C B	Maintain & repair apparatus & circuits (*Electronics*)	1	1	1	1	1	1	1
UTE NES206D A	Maintain & repair apparatus & circuits (*Instrumentation*)	1	1	1	1	1	1	1

Unit	Unit of Competency Title	Key Competency						
		A	**B**	**C**	**D**	**E**	**F**	**G**
UTE NES206E A	Maintain & repair apparatus & circuits (*Refrigeration & A/Conditioning*)	1	1	1	1	1	1	1
UTE NES206F A	Maintain & repair apparatus & circuits (*Data Communications*)	1	1	1	1	1	1	1
UTE NES207A A	Co-ordinate maintenance of apparatus & systems' circuits (*Computer Systems*)	1	1	2	2	1	2	1
UTE NES207B A	Co-ordinate maintenance of apparatus & systems' circuits (*Electrical*)	1	1	2	2	1	2	1
UTE NES207C A	Co-ordinate maintenance of apparatus & systems' circuits (*Electronics*)	1	1	2	2	1	2	1
UTE NES207D A	Co-ordinate maintenance of apparatus & systems' circuits (*Instrumentation*)	1	1	2	2	1	2	1
UTE NES207E A	Co-ordinate maintenance of apparatus & systems' circuits (*Refrigeration & A/Conditioning*)	1	1	2	2	1	2	1
UTE NES208N B	Disconnect & reconnect fixed wired electrical equipment 1,000Vac/1,500Vdc (*Pre-Assembled Neon Signs*)	1	1	1	1	1	1	1
UTE NES208P B	Disconnect & reconnect fixed wired electrical equipment 1,000Vac/1,500Vdc (*Single Enclosed C/Device*)	1	1	1	1	1	1	1
UTE NES208Q B	Disconnect & reconnect fixed wired electrical equipment 1,000Vac/1,500Vdc (*Control Devices*)	1	1	1	1	1	1	1
UTE NES208R B	Disconnect & reconnect fixed wired electrical equipment 1,000Vac/1,500Vdc (*Electrical Heaters)*	1	1	1	1	1	1	1
UTE NES208S B	Disconnect & reconnect fixed wired electrical equipment 1,000V ac/1,500V dc (*Motors)*	1	1	1	1	1	1	1

Unit	Unit of Competency Title	Key Competency						
		A	**B**	**C**	**D**	**E**	**F**	**G**
UTE NES209N A	Attach flexible cords & plugs to electrical equipment 250 volt supply (*Pre-Assembled Neon Signs*)	1	1	1	1	1	1	1
UTE NES209P A	Attach flexible cords & plugs to electrical equipment 250 volt supply (*Single Enclosed C/Device*)	1	1	1	1	1	1	1
UTE NES209Q A	Attach flexible cords & plugs to electrical equipment 250 volt supply (*Control Devices*)	1	1	1	1	1	1	1
UTE NES209R A	Attach flexible cords & plugs to electrical equipment 250 volt supply (*Electrical Heaters)*	1	1	1	1	1	1	1
UTE NES209S A	Attach flexible cords & plugs to electrical equipment 250 volt supply (*Motors)*	1	1	1	1	1	1	1
UTE NES210N A	Attach flexible cords & plugs to electrical equipment 1,000Vac/1,500Vdc (*Pre-Assembled Neon Signs*)	1	1	1	1	1	1	1
UTE NES210P A	Attach flexible cords & plugs to electrical equipment 1,000Vac/1,500Vdc (*Single Enclosed C/Device*)	1	1	1	1	1	1	1
UTE NES210Q A	Attach flexible cords & plugs to electrical equipment 1,000Vac/1,500Vdc (*Control Devices*)	1	1	1	1	1	1	1
UTE NES210R A	Attach flexible cords & plugs to electrical equipment 1,000Vac/1,500Vdc (*Electrical Heaters)*	1	1	1	1	1	1	1
UTE NES210S A	Attach flexible cords & plugs to electrical equipment 1,000Vac/1,500Vdc (*Motors)*	1	1	1	1	1	1	1
UTE NES211 A	Disconnect & reconnect explosion-protected electrical equip. connected fixed wired 1,000Vac/1,500Vdc	1	1	1	1	1	1	1

Unit	Unit of Competency Title	Key Competency						
		A	**B**	**C**	**D**	**E**	**F**	**G**
UTE NES212 A	Disconnect & re-connect HV electric propulsion components engine driven, earth moving vehicles 3.3kv	1	1	1	1	1	1	1
UTE NES213 A	Attach flexible cables & plugs to electrical equipment connected to a high voltage supply	1	1	1	1	1	1	1
UTE NES214T A	Maintain equipment in hazardous areas (*Ex mixed*)	1	1	1	1	1	1	1
UTE NES214U A	Maintain equipment in hazardous areas (*Ex p*)	1	1	1	1	1	1	1
UTE NES214V A	Maintain equipment in hazardous areas (*Dip*)	1	1	1	1	1	1	1
UTE NES214W A	Maintain equipment in hazardous areas (*Ex n*)	1	1	1	1	1	1	1
UTE NES214X A	Maintain equipment in hazardous areas (*Ex i*)	1	1	1	1	1	1	1
UTE NES214Y A	Maintain equipment in hazardous areas (*Ex e*)	1	1	1	1	1	1	1
UTE NES214Z A	Maintain equipment in hazardous areas (*Ex d*)	1	1	1	1	1	1	1
UTE NES215T A	Overhaul & repair explosion-protected equipment (*Ex mixed*)	1	1	2	2	1	2	1
UTE NES215U A	Overhaul & repair explosion-protected equipment (*Ex p*)	1	1	2	2	1	2	1
UTE NES215V A	Overhaul & repair explosion-protected equipment (*Dip*)	1	1	2	2	1	2	1
UTE NES215W A	Overhaul & repair explosion-protected equipment (*Ex n*)	1	1	2	2	1	2	1
UTE NES215X A	Overhaul & repair explosion-protected equipment (*Ex i*)	1	1	2	2	1	2	1
UTE NES215Y A	Overhaul & repair explosion-protected equipment (*Ex e*)	1	1	2	2	1	2	1
UTE NES215Z A	Overhaul & repair explosion-protected equipment (*Ex d*)	1	1	2	2	1	2	1

Unit	Unit of Competency Title	Key Competency						
		A	**B**	**C**	**D**	**E**	**F**	**G**
UTE NES216 A	Perform basic servicing to plant/equipment associated with remote area essential services operation	1	1	1	1	1	1	1
UTE NES217 A	Maintain environmental conditions of a remote area utilities operation	1	1	1	1	1	1	1
UTE NES218 A	Maintain office records & administrative systems	1	1	1	1	1	1	1
UTE NES219 A	Co-ordinate maintenance of renewable energy apparatus and systems	1	1	1	1	1	1	1
UTE NES220 A	Maintain and repair digital televisions	1	1	1	1	1	1	1
UTE NES301A A	Undertake commissioning of apparatus & circuits (*Computer Systems*)	1	1	1	1	1	1	1
UTE NES301B A	Undertake commissioning of apparatus & circuits (*Electrical*)	1	1	1	1	1	1	1
UTE NES301C A	Undertake commissioning of apparatus & circuits (*Electronics*)	1	1	1	1	1	1	1
UTE NES301D A	Undertake commissioning of apparatus & circuits (*Instrumentation*)	1	1	1	1	1	1	1
UTE NES301E A	Undertake commissioning of apparatus & circuits (*Refrigeration & A/Conditioning*)	1	1	1	1	1	1	1
UTE NES301F A	Undertake commissioning of apparatus & circuits (*Data Communications*)	1	1	1	1	1	1	1
UTE NES302A A	Undertake commissioning of apparatus & complex circuits (*Computer Systems*)	1	1	1	1	1	1	1
UTE NES302B A	Undertake commissioning of apparatus & complex circuits (*Electrical*)	1	1	1	1	1	1	1

Unit	Unit of Competency Title	Key Competency						
		A	**B**	**C**	**D**	**E**	**F**	**G**
UTE NES302C A	Undertake commissioning of apparatus & complex circuits (*Electronics*)	1	1	1	1	1	1	1
UTE NES302D A	Undertake commissioning of apparatus & complex circuits (*Instrumentation*)	1	1	1	1	1	1	1
UTE NES302E A	Undertake commissioning of apparatus & complex circuits (*Refrigeration & A/Conditioning*)	1	1	1	1	1	1	1
UTE NES303A A	Undertake commissioning of apparatus & systems' circuits (*Computer Systems*)	1	1	1	1	1	1	1
UTE NES303B A	Undertake commissioning of apparatus & systems' circuits (*Electrical*)	1	1	1	1	1	1	1
UTE NES303C A	Undertake commissioning of apparatus & systems' circuits (*Electronics*)	1	1	1	1	1	1	1
UTE NES303D A	Undertake commissioning of apparatus & systems' circuits (*Instrumentation*)	1	1	1	1	1	1	1
UTE NES303E A	Undertake commissioning of apparatus & systems' circuits (*Refrigeration & A/Conditioning*)	1	1	1	1	1	1	1
UTE NES304A A	Undertake commissioning of advanced systems & apparatus *(Computer Systems)*	2	1	2	1	2	2	2
UTE NES304B A	Undertake commissioning of advanced systems & apparatus (*Electrical*)	2	1	2	1	2	2	2
UTE NES304C A	Undertake commissioning of advanced systems & apparatus (*Electronics*)	2	1	2	1	2	2	2
UTE NES304D A	Undertake commissioning of advanced systems & apparatus (*Instrumentation*)	2	1	2	1	2	2	2
UTE NES305 A	Undertake commissioning procedures of renewable energy apparatus and systems	2	1	2	1	2	2	2

Unit	Unit of Competency Title	Key Competency						
		A	**B**	**C**	**D**	**E**	**F**	**G**
UTE NES306 A	Commission commercial fire protection systems	2	2	2	2	2	2	2
UTE NES401A B	Perform functional apparatus checks (*Computer Systems*)	1	1	1	1	1	1	1
UTE NES401B C	Perform functional apparatus checks (*Electrical*)	1	1	1	1	1	1	1
UTE NES401C B	Perform functional apparatus checks (*Electronics*)	1	1	1	1	1	1	1
UTE NES401E C	Perform functional apparatus checks (*Refrigeration & A/Conditioning*)	1	1	1	1	1	1	1
UTE NES401F B	Perform functional apparatus checks (*Data Communications*)	1	1	1	1	1	1	1
UTE NES402A A	Test apparatus & circuits (*Computer Systems*)	1	1	1	1	1	1	1
UTE NES402B A	Test apparatus & circuits (*Electrical*)	1	1	1	1	1	1	1
UTE NES402C A	Test apparatus & circuits (*Electronics*)	1	1	1	1	1	1	1
UTE NES402D A	Test apparatus & circuits (*Instrumentation*)	1	1	1	1	1	1	1
UTE NES402E A	Test apparatus & circuits (*Refrigeration & A/Conditioning*)	1	1	1	1	1	1	1
UTE NES402F A	Test apparatus & circuits (*Data Communications*)	1	1	1	1	1	1	1
UTE NES403A A	Test apparatus & complex circuits (*Computer Systems*)	1	1	1	1	1	1	1
UTE NES403B A	Test apparatus & complex circuits (*Electrical*)	1	1	1	1	1	1	1
UTE NES403C A	Test apparatus & complex circuits (*Electronics*)	1	1	1	1	1	1	1
UTE NES403D A	Test apparatus & complex circuits (*Instrumentation*)	1	1	1	1	1	1	1
UTE NES403E A	Test apparatus & complex circuits (*Refrigeration & A/Conditioning*)	1	1	1	1	1	1	1

Unit	Unit of Competency Title	Key Competency						
		A	**B**	**C**	**D**	**E**	**F**	**G**
UTE NES404A A	Assess electrical/electronic apparatus (*Computer Systems*)	1	1	1	1	1	1	1
UTE NES404B A	Assess electrical/electronic apparatus (*Electrical*)	1	1	1	1	1	1	1
UTE NES404C A	Assess electrical/electronic apparatus (*Electronics*)	1	1	1	1	1	1	1
UTE NES404D A	Assess electrical/electronic apparatus (*Instrumentation*)	1	1	1	1	1	1	1
UTE NES404E A	Assess electrical/electronic apparatus (*Refrigeration & A/Conditioning*)	1	1	1	1	1	1	1
UTE NES405 B	Inspect/investigate electrical apparatus and associated circuits	3	3	3	3	3	3	3
UTE NES406A A	Develop complex testing & evaluation procedures (*Computer Systems*)	2	1	2	1	2	2	2
UTE NES406B A	Develop complex testing & evaluation procedures (*Electrical*)	2	1	2	1	2	2	2
UTE NES406C A	Develop complex testing & evaluation procedures (*Electronics*)	2	1	2	1	2	2	2
UTE NES406D A	Develop complex testing & evaluation procedures (*Instrumentation*)	2	1	2	1	2	2	2
UTE NES407T A	Assess explosion-protected equipment for conformance with standards(*Ex mixed*)	2	2	2	2	1	2	1
UTE NES407U A	Assess explosion-protected equipment for conformance with standards(*Ex p*)	2	2	2	2	1	2	1
UTE NES407V A	Assess explosion-protected equipment for conformance with standards(*Dip*)	2	2	2	2	1	2	1
UTE NES407W A	Assess explosion-protected equipment for conformance with standards(*Ex n*)	2	2	2	2	1	2	1

Unit	Unit of Competency Title	Key Competency						
		A	**B**	**C**	**D**	**E**	**F**	**G**
UTE NES407X A	Assess explosion-protected equipment for conformance with standards(*Ex i*)	2	2	2	2	1	2	1
UTE NES407Y A	Assess explosion-protected equipment for conformance with standards(*Ex e*)	2	2	2	2	1	2	1
UTE NES407Z A	Assess explosion-protected equipment for conformance with standards(*Ex d*)	2	2	2	2	1	2	1
UTE NES408T A	Test installations in hazardous areas (*Ex mixed*)	2	2	2	2	1	2	1
UTE NES408U A	Test installations in hazardous areas (*Ex p*)	2	2	2	2	1	2	1
UTE NES408V A	Test installations in hazardous areas (*Dip*)	2	2	2	2	1	2	1
UTE NES408W A	Test installations in hazardous areas (*Ex n*)	2	2	2	2	1	2	1
UTE NES408X A	Test installations in hazardous areas (*Ex i*)	2	2	2	2	1	2	1
UTE NES408Y A	Test installations in hazardous areas (*Ex e*)	2	2	2	2	1	2	1
UTE NES408Z A	Test installations in hazardous areas (*Ex d*)	2	2	2	2	1	2	1
UTE NES409T A	Inspect visually existing hazardous area installations (*Ex mixed*)	2	2	2	2	1	2	1
UTE NES409U A	Inspect visually existing hazardous area installations (*Ex p*)	2	2	2	2	1	2	1
UTE NES409V A	Inspect visually existing hazardous area installations (*Dip*)	2	2	2	2	1	2	1
UTE NES409W A	Inspect visually existing hazardous area installations (*Ex n*)	2	2	2	2	1	2	1
UTE NES409X A	Inspect visually existing hazardous area installations (*Ex i*)	2	2	2	2	1	2	1
UTE NES409Y A	Inspect visually existing hazardous area installations (*Ex e*)	2	2	2	2	1	2	1
UTE NES409Z A	Inspect visually existing hazardous area installations (*Ex d*)	2	2	2	2	1	2	1

Unit	Unit of Competency Title	Key Competency						
		A	**B**	**C**	**D**	**E**	**F**	**G**
UTE NES410T A	Inspect in detail hazardous area installations (*Ex mixed*)	2	2	2	2	1	2	1
UTE NES410U A	Inspect in detail hazardous area installations (*Ex p*)	2	2	2	2	1	2	1
UTE NES410V A	Inspect in detail hazardous area installations (*Dip*)	2	2	2	2	1	2	1
UTE NES410W A	Inspect in detail hazardous area installations (*Ex n*)	2	2	2	2	1	2	1
UTE NES410X A	Inspect in detail hazardous area installations (*Ex i*)	2	2	2	2	1	2	1
UTE NES410Y A	Inspect in detail hazardous area installations (*Ex e*)	2	2	2	2	1	2	1
UTE NES410Z A	Inspect in detail hazardous area installations (*Ex d*)	2	2	2	2	1	2	1
UTE NES411 A	Assess renewable energy apparatus and systems	1	1	1	1	1	1	1
UTE NES412 A	Test renewable energy apparatus and systems	2	2	2	2	1	2	1
UTE NES413 A	Reduce the energy consumption within a building	1	1	1	1	1	1	1
UTE NES414 A	Program and verify programmable controllers	1	1	1	1	1	1	1
UTE NES415 A	Program and verify programmable controller systems	1	1	1	1	1	1	1
UTE NES416 A	Verify compliance and functionality of fire protection installations	2	2	2	2	2	2	2
UTE NES501A A	Diagnose & rectify faults in apparatus & circuits (*Computer Systems*)	1	1	1	1	1	1	1
UTE NES501B A	Diagnose & rectify faults in apparatus & circuits (*Electrical*)	1	1	1	1	1	1	1
UTE NES501C A	Diagnose & rectify faults in apparatus & circuits (*Electronics*)	1	1	1	1	1	1	1

Unit	Unit of Competency Title	Key Competency						
		A	**B**	**C**	**D**	**E**	**F**	**G**
UTE NES501D A	Diagnose & rectify faults in apparatus & circuits (*Instrumentation*)	1	1	1	1	1	1	1
UTE NES501E A	Diagnose & rectify faults in apparatus & circuits (*Refrigeration & A/Conditioning*)	1	1	1	1	1	1	1
UTE NES501F A	Diagnose & rectify faults in apparatus & circuits (*Data Communications*)	1	1	1	1	1	1	1
UTE NES502A A	Diagnose & rectify faults in apparatus & complex circuits (*Computer Systems*)	1	1	1	1	1	1	1
UTE NES502B A	Diagnose & rectify faults in apparatus & complex circuits (*Electrical*)	1	1	1	1	1	1	1
UTE NES502C A	Diagnose & rectify faults in apparatus & complex circuits (*Electronics*)	1	1	1	1	1	1	1
UTE NES502D A	Diagnose & rectify faults in apparatus & complex circuits (*Instrumentation*)	1	1	1	1	1	1	1
UTE NES502E A	Diagnose & rectify faults in apparatus & complex circuits (*Refrigeration & A/Conditioning*)	1	1	1	1	1	1	1
UTE NES503A A	Diagnose & rectify faults in apparatus & systems' circuits (*Computer Systems*)	1	1	1	1	1	1	1
UTE NES503B A	Diagnose & rectify faults in apparatus & systems' circuits (*Electrical*)	1	1	1	1	1	1	1
UTE NES503C A	Diagnose & rectify faults in apparatus & systems' circuits (*Electronics*)	1	1	1	1	1	1	1
UTE NES503D A	Diagnose & rectify faults in apparatus & systems' circuits (*Instrumentation*)	1	1	1	1	1	1	1
UTE NES503E A	Diagnose & rectify faults in apparatus & systems' circuits (*Refrigeration & A/Conditioning*)	1	1	1	1	1	1	1

Unit	Unit of Competency Title	Key Competency						
		A	**B**	**C**	**D**	**E**	**F**	**G**
UTE NES504A A	Diagnose & rectify faults in advanced systems & apparatus (*Computer Systems*)	2	1	2	1	2	2	2
UTE NES504B A	Diagnose & rectify faults in advanced systems & apparatus (*Electrical*)	2	1	2	1	2	2	2
UTE NES504C A	Diagnose & rectify faults in advanced systems & apparatus (*Electronics*)	2	1	2	1	2	2	2
UTE NES504D A	Diagnose & rectify faults in advanced systems & apparatus (*Instrumentation*)	2	1	2	1	2	2	2
UTE NES505N B	Locate & rectify fault(s) in electrical equip 1kVac/1.5kVdc by procedures (*Pre-Assembled Neon Signs*)	1	1	1	1	1	1	1
UTE NES505P B	Locate & rectify fault(s) in electrical equip 1kVac/1.5kVdc by procedures (*Single Enclosed C/Device*)	1	1	1	1	1	1	1
UTE NES505Q B	Locate & rectify fault(s) in electrical equipment 1kVac/1.5kVdc by procedures (*Control Devices*)	1	1	1	1	1	1	1
UTE NES505R B	Locate & rectify fault(s) in electrical equipment 1kVac/1.5kVdc by procedures (*Electrical Heaters)*	1	1	1	1	1	1	1
UTE NES505S B	Locate & rectify fault(s) in electrical equipment 1kVac/1.5kVdc by procedures (*Motors)*	1	1	1	1	1	1	1
UTE NES506 A	Diagnose and rectify faults in renewable energy apparatus and Systems	2	1	2	1	2	2	2
UTE NES507 A	Evaluate performance of motor control systems	2	1	2	1	2	2	2
UTE NES508A	Find and repair faults in fire protection systems	2	2	2	2	2	2	2

Unit	Unit of Competency Title	Key Competency						
		A	**B**	**C**	**D**	**E**	**F**	**G**
UTE NES601 A	Co-ordinate the work of others	3	1	3	1	3	1	1
UTE NES602A A	Develop commissioning programs for apparatus & circuits (*Computer Systems*)	3	1	3	3	1	3	1
UTE NES602B A	Develop commissioning programs for apparatus & circuits (*Electrical*)	3	1	3	3	1	3	1
UTE NES602C A	Develop commissioning programs for apparatus & circuits (*Electronics*)	3	1	3	3	1	3	1
UTE NES602D A	Develop commissioning programs for apparatus & circuits (*Instrumentation*)	3	1	3	3	1	3	1
UTE NES603A A	Develop maintenance programs for apparatus & circuits (*Computer Systems*)	3	1	3	3	1	3	1
UTE NES603B A	Develop maintenance programs for apparatus & circuits (*Electrical*)	3	1	3	3	1	3	1
UTE NES603C A	Develop maintenance programs for apparatus & circuits (*Electronics*)	3	1	3	3	1	3	1
UTE NES603D A	Develop maintenance programs for apparatus & circuits (*Instrumentation*)	3	1	3	3	1	3	1
UTE NES604A A	Co-ordinate & manage commissioning processes (*Computer Systems*)	2	1	2	1	1	2	1
UTE NES604B A	Co-ordinate & manage commissioning processes (*Electrical*)	2	1	2	1	1	2	1
UTE NES604C A	Co-ordinate & manage commissioning processes (*Electronics*)	2	1	2	1	1	2	1
UTE NES604D A	Co-ordinate & manage commissioning processes (*Instrumentation*)	2	1	2	1	1	2	1
UTE NES604E A	Co-ordinate & manage commissioning processes (*Refrigeration & A/Conditioning)*	2	1	2	1	1	2	1

Unit	Unit of Competency Title	Key Competency						
		A	**B**	**C**	**D**	**E**	**F**	**G**
UTE NES605A A	Co-ordinate & manage routine maintenance (*Computer Systems*)	2	1	2	1	1	2	1
UTE NES605B A	Co-ordinate & manage routine maintenance (*Electrical*)	2	1	2	1	1	2	1
UTE NES605C A	Co-ordinate & manage routine maintenance (*Electronics*)	2	1	2	1	1	2	1
UTE NES605D A	Co-ordinate & manage routine maintenance (*Instrumentation*)	2	1	2	1	1	2	1
UTE NES605E A	Co-ordinate & manage routine maintenance (*Refrigeration & A/Conditioning*)	2	1	2	1	1	2	1
UTE NES606A A	Co-ordinate & manage installation projects (*Computer Systems*)	2	1	2	1	1	2	1
UTE NES606B A	Co-ordinate & manage installation projects (*Electrical*)	2	1	2	1	1	2	1
UTE NES606C A	Co-ordinate & manage installation projects (*Electronics*)	2	1	2	1	1	2	1
UTE NES606D A	Co-ordinate & manage installation projects (*Instrumentation*)	2	1	2	1	1	2	1
UTE NES606E A	Co-ordinate & manage installation projects (*Refrigeration & A/Conditioning*)	2	1	2	1	1	2	1
UTE NES607 A	Develop & apply electrotechnology contracting business plans	2	1	2	1	1	2	1
UTE NES608 A	Apply electrotechnology contracting business practices	2	1	2	1	1	2	1
UTE NES609T A	Develop & manage maintenance programs for hazardous area electrical equipment (*Ex mixed*)	2	2	2	2	1	2	1
UTE NES609U A	Develop & manage maintenance programs for hazardous area electrical equipment (*Ex p*)	2	2	2	2	1	2	1
UTE NES609V A	Develop & manage maintenance programs for hazardous area electrical equipment (*Dip*)	2	2	2	2	1	2	1

Unit	Unit of Competency Title	Key Competency						
		A	**B**	**C**	**D**	**E**	**F**	**G**
UTE NES609W A	Develop & manage maintenance programs for hazardous area electrical equipment (*Ex n*)	2	2	2	2	1	2	1
UTE NES609X A	Develop & manage maintenance programs for hazardous area electrical equipment (*Ex i*)	2	2	2	2	1	2	1
UTE NES609Y A	Develop & manage maintenance programs for hazardous area electrical equipment (*Ex e*)	2	2	2	2	1	2	1
UTE NES609Z A	Develop & manage maintenance programs for hazardous area electrical equipment (*Ex d*)	2	2	2	2	1	2	1
UTE NES610 A	Ensure the safety of hazardous areas	2	1	1	1	1	1	1
UTE NES701A A	Redesign & develop modifications to apparatus & systems' circuits (*Computer Systems*)	3	1	1	1	1	1	1
UTE NES701B A	Redesign & develop modifications to apparatus & systems' circuits (*Electrical*)	3	1	1	1	1	1	1
UTE NES701C A	Redesign & develop modifications to apparatus & systems' circuits (*Electronics*)	3	1	1	1	1	1	1
UTE NES701D A	Redesign & develop modifications to apparatus & systems' circuits (*Instrumentation*)	3	1	1	1	1	1	1
UTE NES701E A	Redesign & develop modifications to apparatus & systems' circuits (*Refrigeration & A/Conditioning*)	3	1	1	1	1	1	1
UTE NES702A A	Design electrical/electronic apparatus & systems (*Computer Systems*)	3	1	1	1	1	1	1
UTE NES702B A	Design electrical/electronic apparatus & systems (*Electrical*)	3	1	1	1	1	1	1
UTE NES702C A	Design electrical/electronic apparatus & systems (*Electronics*)	3	1	1	1	1	1	1

Unit	Unit of Competency Title	Key Competency						
		A	**B**	**C**	**D**	**E**	**F**	**G**
UTE NES702D A	Design electrical/electronic apparatus & systems (*Instrumentation*)	3	1	1	1	1	1	1
UTE NES703A A	Plan installation of electrotech apparatus & wiring/piping systems (*Computer Systems*)	2	1	2	1	2	2	2
UTE NES703B A	Plan installation of electrotech apparatus & wiring/piping systems (*Electrical*)	2	1	2	1	2	2	2
UTE NES703C A	Plan installation of electrotech apparatus & wiring/piping systems (*Electronics*)	2	1	2	1	2	2	2
UTE NES703D A	Plan installation of electrotech apparatus & wiring/piping systems (*Instrumentation*)	2	1	2	1	2	2	2
UTE NES703E A	Plan installation of electrotech apparatus & wiring/piping systems (*Refrigeration & A/Conditioning*)	2	1	2	1	2	2	2
UTE NES704 A	Plan illumination systems	2	1	1	1	1	1	2
UTE NES705T A	Design & develop modifications to explosion-protected equipment (*Ex mixed*)	2	2	2	2	1	2	1
UTE NES705U A	Design & develop modifications to explosion-protected equipment (*Ex p*)	2	2	2	2	1	2	1
UTE NES705V A	Design & develop modifications to explosion-protected equipment (*Dip*)	2	2	2	2	1	2	1
UTE NES705W A	Design & develop modifications to explosion-protected equipment (*Ex n*)	2	2	2	2	1	2	1
UTE NES705X A	Design & develop modifications to explosion-protected equipment (*Ex i*)	2	2	2	2	1	2	1
UTE NES705Y A	Design & develop modifications to explosion-protected equipment (*Ex e*)	2	2	2	2	1	2	1

Unit	Unit of Competency Title	Key Competency						
		A	**B**	**C**	**D**	**E**	**F**	**G**
UTE NES705Z A	Design & develop modifications to explosion-protected equipment (*Ex d*)	2	2	2	2	1	2	1
UTE NES706 A	Classify hazardous areas	2	2	2	2	1	2	1
UTE NES707T A	Design electrical installations in hazardous areas (*Ex mixed*)	2	2	2	2	1	2	1
UTE NES707U A	Design electrical installations in hazardous areas (*Ex p*)	2	2	2	2	1	2	1
UTE NES707V A	Design electrical installations in hazardous areas (*Dip*)	2	2	2	2	1	2	1
UTE NES707W A	Design electrical installations in hazardous areas (*Ex n*)	2	2	2	2	1	2	1
UTE NES707X A	Design electrical installations in hazardous areas (*Ex i*)	2	2	2	2	1	2	1
UTE NES707Y A	Design electrical installations in hazardous areas (*Ex e*)	2	2	2	2	1	2	1
UTE NES707Z A	Design electrical installations in hazardous areas (*Ex d*)	2	2	2	2	1	2	1
UTE NES708T A	Design explosion-protected electrical systems (*Ex mixed*)	2	2	2	2	1	2	1
UTE NES708U A	Design explosion-protected electrical systems (*Ex p*)	2	2	2	2	1	2	1
UTE NES708V A	Design explosion-protected electrical systems (*Dip*)	2	2	2	2	1	2	1
UTE NES708W A	Design explosion-protected electrical systems (*Ex n*)	2	2	2	2	1	2	1
UTE NES708X A	Design explosion-protected electrical systems (*Ex i*)	2	2	2	2	1	2	1
UTE NES708Y A	Design explosion-protected electrical systems (*Ex e*)	2	2	2	2	1	2	1
UTE NES708Z A	Design explosion-protected electrical systems (*Ex d*)	2	2	2	2	1	2	1
UTE NES709 A	Design a renewable energy system	2	2	2	2	1	2	2
UTE NES710 A	Plan the installation of renewable energy apparatus and systems	2	1	2	1	2	2	2

Unit relationship listing/diagrams – Enclosure 4

Independent Units

These units of competency are those which do not link to an assessment event of another unit(s), and therefore are independent units. These are listed below. For interdependent and specialist units, see sections following independent units.

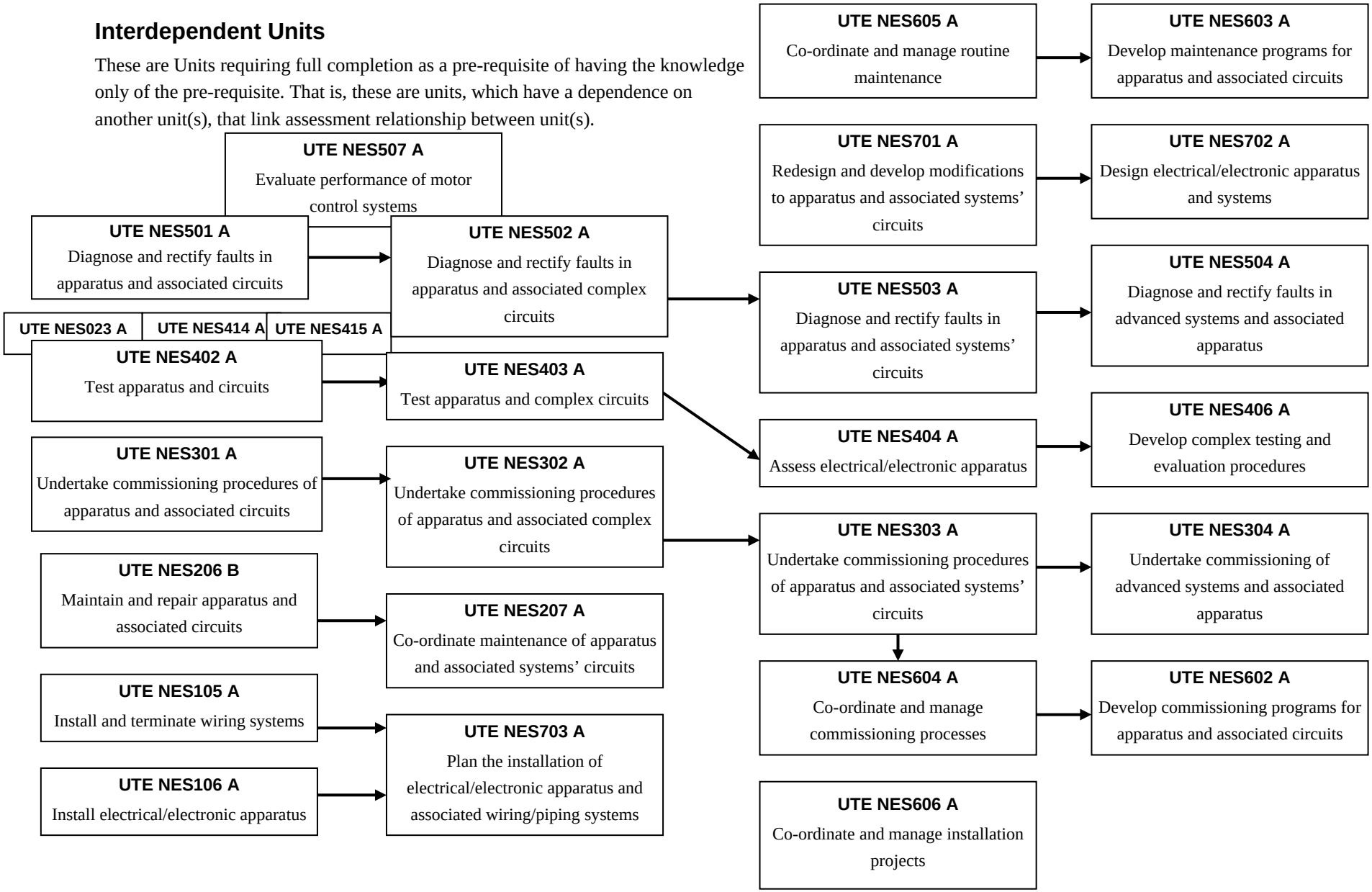
Unit No.	Unit Title
UTE NES001A	Undertake basic work activities
UTE NES002 A	Attend to breakdown
UTE NES003 A	Transport apparatus & materials
UTE NES004 A	Operate plant, machinery & equipment
UTE NES005 A	Co-ordinate materials
UTE NES006 A	Estimate projects
UTE NES007 A	Supply projects
UTE NES008 A	Provide technical leadership in the workplace
UTE NES009 A	Participate in the training of others
UTE NES011 A	Monitor energy usage in an electrotechnology context
UTE NES014 A	Undertake basic office/warehouse administration
UTE NES015 A	Promote basic organisational services/products
UTE NES016 A	Promote detailed organisational services/products
UTE NES017 A	Project tendering
UTE NES018 A	Assemble and disassemble scaffolding to enable access to the work area
UTE NES019 A	Perform rigging of heavy loads to facilitate placement and the assembly of apparatus
UTE NES050 A	Identify & select components/accessories/materials for Electrotech work activities
UTE NES051 A	Use of routine equipment/plant/technologies in an Electrotech environment
UTE NES052 A	Interact with customers/clients for quality service

Unit No.	Unit Title
UTE NES053 A	Participate in job data records collection of the business
UTE NES054 A	Produce routine products for carrying out Electrotech work activities
UTE NES055 A	Produce routine tools/devices for carrying out Electrotech work activities
UTE NES056 A	Apply technologies and concepts to Electrotech work activities
UTE NES057 A	Apply computation when using equipment/materials/ concepts in an Electrotech environment
UTE NES058 A	Identify affects of energy on machinery/materials in an Electrotech environment
UTE NES059 A	Identify building techniques, methods and materials used in Electrotech works activities
UTE NES060 A	Carry out routine work activities in an Electrotech environment
UTE NES061 A	Provide basic sustainable energy solutions for energy reduction in domestic premises
UTE NES062 A	Apply sustainable energy practice in daily activities
UTE NES063 A	Contribute to the operation of support plant & equipment used in Electricity Supply
UTE NES064 A	Undertake computations in an Electrotechnology environment
UTE NES065 A	Promote sustainable energy practice in the community
UTE NES101 A	Install a pre-assembled neon sign
UTE NES102 A	Assemble and erect antennae and associated hardware
UTE NES103 A	Install/maintain piping and tubing
UTE NES104 A	Install and maintain energy management equipment
UTE NES108 A	Install overhead communications cables
UTE NES109 A	Install below ground communications cables
UTE NES110 A	Install and maintain fluid measurement equipment
UTE NES111 A	Maintain off

Unit No.	Unit Title
UTE NES120 A	Install consumer video systems
UTE NES201 D	Perform basic repair to electrical/electronic apparatus
UTE NES202 D	Assemble/disassemble electrical/electronic components
UTE NES203 A	Assemble electrical/ electronic apparatus
UTE NES204 A	Vegetation control
UTE NES205 B	Conduct powerline switching
UTE NES218 A	Maintain office records and administrative systems
UTE NES220 A	Maintain and repair digital televisions
UTE NES401 D	Perform functional apparatus checks
UTE NES405 B	Inspect/investigate electrical apparatus and associated circuits
UTE NES601 A	Co-ordinate the work of others
UTE NES607 A	Develop and apply electrotechnology contracting business plans
UTE NES608 A	Apply electrotechnology contracting business practices
UTE NES704 A	Plan illumination systems

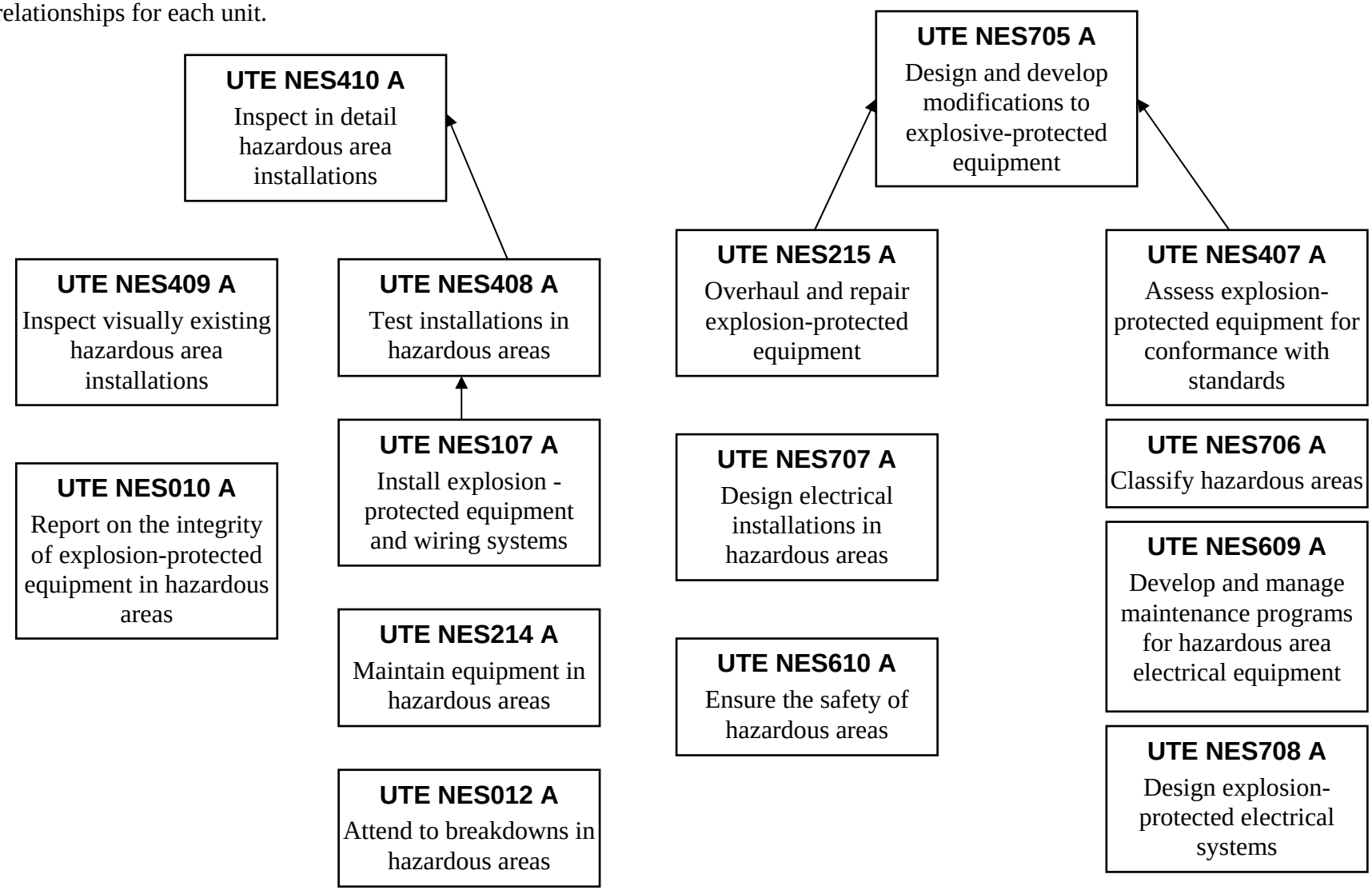
Interdependent Units

These are Units requiring full completion as a pre-requisite of having the knowledge only of the pre-requisite. That is, these are units, which have a dependence on another unit(s), that link assessment relationship between unit(s).



Electrical Equipment in Hazardous Areas

These units have been included in this diagram to show those which are related to EEHA, and include independent and interdependent relationships for each unit.



Restricted and specialist & Remote area essential services

UTE NES208
Disconnect and reconnect fixed wired electrical equipment connected to supply up to 1,000 volts a.c. or 1,500 volts d.c.

UTE NES209
Attach flexible cords and plugs to electrical equipment connected to a single phase 250 volt supply

UTE NES210
Attach flexible cords and plugs to electrical equipment connected to a supply up to 1,000 volts a.c. or 1,500 volts d.c.

UTE NES211
Disconnect and reconnect explosion-protected electrical equipment connected to fixed wired supply up to 1,000 volts a.c or 1,500 volts d.c.

UTE NES212
Disconnection and re-connection of HV Electric Propulsion Components on Engine Driven, Self-Propelled Earth Moving Vehicles, operating at 3,300 volts

UTE NES213
Attach flexible cables and plugs to electrical equipment connected to a high voltage supply

UTE NES505
Locate and rectify fault(s) in electrical equipment intended to operate to a connected fixed wired supply up to 1,000 volts a.c. or 1,500 volts d.c. following prescribed procedures

UTE NES013
Monitor a remote area essential services operation

UTE NES216
Perform basic servicing to plant/equipment associated with a remote area essential services operation

UTE NES217
Maintain environmental conditions of a remote area utilities operation

These units have been grouped to show the particular industrial focus and/or environmental nature that apply. With respect to the restricted units these have a regulatory context. Interdependency and independency are also shown.

Glossary – Enclosure 5

Italic typeface is used in this National Training Package and the associated competency standards indicates terms and variables that require further explanation. Explanation of terms and variables that have meaning in a particular unit are given in the range statements and should be referenced accordingly at all times. Those that have a common meaning throughout this standard are explained below.

In many instances, the explanations of relevant terms are direct extracts from or are derived from technical standards published by Standards Australia or jointly by Standards Australia and Standards New Zealand.

It should be noted that some Units of competency have unique features. Consequently, these units have additional glossary terms included within.

Common terms and variables

Accessories -

Any device associated with, and forming an integral part of, the wiring systems such as switch, fuse, plug, socket outlet, lampholder, fitting, adaptor, ceiling rose; connectors, clamps, splitters, termination posts, lugs, strips and blocks; clips, ties and bindings.

Apparatus -

Any equipment forming a component part of an installation used for a particular purpose. *Apparatus* includes, but is not limited to, that contained in the following divisions. It will necessarily include new and emerging technologies:

- **Audio/visual equipment** including televisions, radios, monitors, cameras, closed circuit television, mono and stereo sound systems, gaming machines, electronic display panels, cassette recorders, video cassette recorders, CDROM players, tape recorders, sound and video duplication equipment, digital versatile discs, digital audio tapes, professional and domestic speaker systems, mixer desks.
- **Air conditioning equipment** including room air conditioners, split systems, package units, ducted units, evaporative coolers, ventilation systems.
- **Appliances** including portable electric tools, motor driven pumps, vacuum cleaners, food preparation equipment, hair dryers, refrigerators, washing machines, dish washers, paper shredders, water coolers, clothes dryers, pest exterminators, electric motor driven industrial tools and equipment, sanitary disposal units, radial and tangential fans and blowers.
- **Business equipment** including facsimile machines, photocopiers, printers, scanners, modems, computers and peripherals, financial transaction devices and systems.
- **Communications equipment** including radio transmitters, television transmitters, microwave transmitters and receivers, repeaters, two way radios, antennae, satellite linkage equipment.

- **Computer systems** including personal computers, computer networks, peripherals, supervisory control and data acquisition systems, modems, bridges, servers, routers, automatic data capture equipment.
- **Electrical and electronic controllers and control systems** including switchboards and control centres, alternating and direct current regulated and unregulated power supplies, rectifiers and filters, electromechanical and solid state relays and contactors, programmable controllers, uninterruptable power supplies, oscillators, motor speed controllers, electromechanical and dynamic brakes, battery charging and electroplating equipment, lamp dimmers and flashers, transducers, frequency injection systems.
- **Electrical machines and associated drives** including single phase and polyphase alternating current cage and wound rotor induction motors and synchronous motors and generators, direct current motors and generators, amplidynes, dynamometers, stepper motors, servo motors and synchros, double wound and auto transformers, induction regulators, electronic variable speed and eddy current drives.
- **Energy management and sustainable energy equipment** including solar cells, stand-by batteries, inverters, wind generators, hybrid systems, stand-by alternators, power factor correction controllers.
- **Heating equipment** including single and polyphase instantaneous and quick recovery water heaters, space heaters, induction heaters, electric furnaces, commercial food warmers, microwave and dielectric heaters, electric ranges, stoves and oven tops.
- **Instrumentation/process control devices and equipment** including controllers, transmitters, final control elements, detectors, process loop auxiliary equipment, indicators and recorders, monitors and computer interface equipment.
- **Lighting** including incandescent, quartz halogen and vapour lamps, applications in domestic, commercial, industrial and sporting settings, advertising signs, security lighting, road and highway lighting.
- **Measuring instruments** including digital and analogue ammeters, voltmeters, watt and var meters, frequency meters, phase rotation devices, oscilloscopes, power factor indicators, energy meters, insulation resistance devices, continuity testers, chart recorders, voltage detectors, Wheatstone and double bridges, instruments to measure signal strength, harmonic distortion, electro-magnetic and electro-static fields.
- **Medical electronics and equipment** including x-ray machines, cardiographic monitoring equipment, electrophoresis equipment, electron microscopes, infra-red (deep heat) equipment, physical therapy equipment, CAT scan equipment, ultrasound equipment, defibrillators, infusion pumps, incubators, ventilators, foetal monitors, thermometric devices, anaesthetic units, gas monitors, dialysis equipment, pacemakers, lasers, endoscopes, blood warmers, physiological monitors.

- **Power distribution/transmission systems** including wood, concrete, steel and composite poles and structures, transmission towers, overhead and underground conductors and cables, electrical metering and recording devices.
- **Refrigeration systems** including refrigerators, freezers, icemakers, cool rooms, freeze rooms, beverage coolers, merchandising and display cabinets, blast freezers.
- **Scanning and detection systems** including: radar systems, sonar systems.
- **Security and fire detection systems** including sensors, controllers, alarm devices, telecommunications interfaces, closed circuit television cameras and monitoring systems.
- **Telecommunication equipment** including switching equipment, PABX, microwave transmitters and receivers, customer premises equipment, customer access networks, transmission equipment.

See also *wiring systems.*

Apparatus, fixed wired -

Apparatus (electrical/electronic) connected to a system of wiring in which cables protected or unprotected are fixed or supported in position.

Appliances -

A fixed (for support only), hand-held (held in hand during normal use), portable (moved whilst in operation or easily moved from one place to another while connected to the supply) or stationary (can be moved, but not easily) consuming device, other than a lamp.

Individuals with responsibilities for co-ordination, design installation, maintenance, production, or servicing activities. This can include:

- site managers
- project managers
- engineers and technicians
- technical experts
- line managers/supervisors
- regulatory personnel
- team leaders
- other personnel designated by an organisation or enterprise

Approval of equipment -

Acceptance by the relevant authority for an item of equipment to be used in a particular situation.

AQF -

Australian Qualifications Framework, which describes qualifications in terms of levels, characterised by the outcomes of vocational education and training.

Capacity, load and duty -

Flow rates of air, fluids and gases; current-carrying capacity; air, fluids and gas pressures; mechanical loading on piping, tubing or cables and supports; maximum demand and current ratings; duty cycles; frequency; environmental conditions.

Categories – general -

Competency can be achieved for any number of the following categories for which **formal endorsement** is to be provided, as prescribed in the evidence guide and critical aspects for each unit. These are:

a. Computer systems: The adaptation of Electrotechnology to the processing and control, communication and storage of information.

b. Electrical: Encompasses the systems associated with wiring reticulation, distribution centres, utilising devices and electrical machines for the conversion of electrical energy into other forms and conversely for the conversion of other forms of energy into electromotive force.

c. Electronics: The use of discrete solid state components and integrated circuits and devices and their associated circuits for application within process control systems, communication systems, computers, measurement, entertainment equipment, electro-medical equipment and the like.

d. Instrumentation: The measurement and control of process system data and parameters for industrial and commercial use. It includes the calibration and maintenance of instrument and processes in the chemical, energy, biotechnology, environmental, food processing and manufacturing industries.

e. Refrigeration and air conditioning: Air conditioning is the provision of clean air to an area at proper temperature and humidity. Refrigeration is the cooling of a space or its contents to a lower temperature than that of the surrounding space or of the ambient atmosphere.

f. Data communications: Encompassing the systems associated with communication distribution equipment, components, and the related devices for the distribution of audiovisual and data between points of transmission and reception.

Categories - relating to wiring systems -

g. Cabling/wiring support and protection: Including cable enclosure, ducts, trunking, roughing and cable trays and conduits, cable supports, aerial systems, catenary systems, underground systems, cable harnesses and looms.

h. Network communications: Including wiring systems and cables for the purpose of transmitting audio, visual or data information and may be associated with such things as twisted pair cables, telephone cables, screened and shielded cables, coaxial cables and optical fibre cables.

i. Power and control – extra low voltage: Including wiring systems and cables for the purposes of providing power and/or analogue or digital control and may be associated with such things as figure eight cables, unshielded twisted pair cables, ribbon cables, coaxial cables, and may include the production of printed circuit boards

j. Power and control – low voltage: Including wiring systems and cables for the purpose of providing power and/or analogue or digital control and may be associated with such things as thermoplastic/elastomer insulated/sheathed cable, multicore, armoured cable, mineral insulated metal sheathed (MIMS) cables, fire retardant cables, flexible cables, trailing cables and busways and includes those cables related to the category power and control extra low voltage.

Categories - relating to powerline switching -

k. Low voltage switching: The isolation and energising of low voltage powerlines for power distribution through approved switching and isolation procedures.

l. High voltage switching: The isolation and energising of high voltage powerlines for power transmission and distribution through approved switching and isolation procedures.

m. System switching: The isolation and energising of feeders in switchgear substations on low voltage and/or high voltage systems including load transfer and may include systems control room operations.

Categories - relating to business support -

n. Administration: Functions of record maintenance, quotation preparation, promotion of work and products, attending to customer and employees enquiries and complaints, preparation of invoices, business plans, service reports, maintenance reports and stock control.

p. Technical: Functions of estimating preparation of quotations, tenders related to installation, maintenance, repair and servicing of electrical/electronic apparatus and systems. Managing contracting projects and contracting business operation.

q. Wholesaling: Sales and supply of apparatus/equipment and electrical accessories to contractors and industrial end-users covering wholesaling-general or wholesaling-warehouse or wholesaling-point of sale.

Circuits -

Covers electrical, hydraulic, pneumatic, optical, magnetic, air flow, hydropic and refrigerant circuits.

Competency can be demonstrated in:

- basic circuits and associated apparatus
- complex circuits and associated apparatus
- systems' circuits and associated apparatus
- advanced circuits/systems and associated apparatus

A hierarchy of circuit complexity has been established within this document (independent of supply circuits) and are defined as follows:

Basic circuits: A basic circuit is defined as a single circuit with a single output.

A single circuit may be controlled by one or more devices and the output may control one or more devices.

Complex circuits: A complex circuit is defined as one made up of more than one interdependent circuit.

A complex circuit is made up of more than one circuit, controlling and processing inputs or outputs.

Systems' circuits: A systems' circuit is defined as one that interconnects between a number of interdependent apparatus.

A systems' circuit is made up of more than one interconnecting circuit controlling and processing apparatus inputs and outputs.

Advanced circuits/systems: Advanced circuits/systems may be complex circuits or systems circuits which contain complicated networks, hybrid circuits and which rely on digital or analogue closed loop feedback for the control of outputs.

Component -

That portion of a unit of *equipment*, which has been designed as a discrete unit and that can be identified as such.

Conditions and ratings -

Relates to flexible cables and plugs that are selected in accordance with Australian and New Zealand Standards and technical data including factors such as:

- Voltage rating
- Current rating
- Sheathing requirement
- Length of cable
- Pin configuration
- Control circuits

- Environmental conditions
- Weather proofing
- Fitting types – shielding, anchorage, earthing and polarity

Consistent performance -

Relates to sufficient evidence being present. This requires evidence that competence has been demonstrated for each element of each unit having been achieved at least three times autonomously and to *requirements.*

Design brief/proposal -

Instructions/specifications/outcomes defining the performance of circuits and associated apparatus, usually for the purpose of ensuring the optimum efficiency, environmental performance, economical effectiveness and operation of the system.

Endorsement: to be reported -

Refers to the endorsement on which an item of *apparatus, appliances, components, equipment, plant and machinery*, enclosures and the like that work can be performed on, (including any inspections, reports and risk assessment), as prescribed in regulations and/or by regulatory authorities, to which the unit applies.

Engineering data -

Refers to documents and other sources from which technical data and product specifications/characteristic are obtained, includes recognised standards publications, manufacturers product data publications and design features.

Environment -

The area surrounding the work site which can be directly or indirectly affected by occurrences at the work site. It includes the atmosphere, soils, drains, underground water tables, and the ecosystem. Protection of the environment would require the proper disposal of waste materials, restriction of burning off, the correct handling of toxic substances, the containment of CFCs and the like.

The protection of the environment would also include the minimisation of those factors that contribute, directly or indirectly, to the production of *greenhouse gases*.

These contributing factors might include the minimisation of waste materials, the correct use of enterprise vehicles and machinery, the re-use or recycling of trade materials where possible and the overall reduction of energy usage through general awareness and the use of appropriate technologies.

Equipment (which is not apparatus) -

Any contributing part of an *installation* which may or may not be composed of *components.*

Established procedures -

Formal arrangements of an organisation, enterprise or statutory authority of how work is to be done. These may include, for example:

- quality assurance systems incorporating, for example:
  - specifications, requirements and procedures
  - work orders / instructions
  - reporting procedures
  - improvement mechanisms
  - compliance requirements
  - safety management
- work clearance systems incorporating, for example:
  - work permits
  - monitoring and clearance procedures
  - isolation procedures
- OH&S practices
- procedures for operating safety systems, operating plant and equipment and reporting work activities
- maintenance, modification or supply of relevant schematic drawings and technical data
- arrangements for dealing with emergency situations.

Greenhouse gases -

Gaseous components of the atmosphere contributing to the greenhouse effect. These gases are produced, for example, when fossil fuels are burned to produce electricity and in other industrial processes.

The greenhouse effect leads to global warming with its ecological and environmental problems.

The minimisation of the use of energy in the workplace, derived from burning fossil fuels, reduces the production of greenhouse gases.

See also *environment*

Initial audit -

An audit that is carried out initially to ascertain whether: a) appropriate procedures have been followed to ensure the safety of the area; b) equipment, systems and installation conform with the design specification and are free from damage; c) any modification have been properly documented and appropriately approved.

Installation -

Wiring systems, *apparatus* and other required items as they are fixed in place and connected as necessary to operate as intended.

Modifications -

To make changes to the physical parameters or operational function of a device, component or piece of equipment or apparatus.

Notification (notified) -

Can include verbal, written, electronic or recorded information at completion of work which may be required to be completed in accordance with established procedures.

OH&S policies and procedures -

Arrangements of an organisation or enterprise to meet their legal and ethical obligations of ensuring the workplace is safe and without risk to health. This may include:

- hazardous and risk assessment mechanisms
- implementation of safety regulations
- safety training
- safety systems incorporating,
  - work clearance procedures
  - isolation procedures
  - gas and vapour
  - monitoring/testing procedures
  - use of protective equipment and clothing
- use of codes of practice

Periodic audit -

An audit that is carried out periodically to ascertain whether: a) appropriate procedures have been followed to ensure the safety of the area; b) equipment, systems and installation conform with the design specification and are free from damage; c) any modification have been properly documented and appropriately approved.

Plant and machinery -

Devices or machines (not considered to be hand tools or hand held power tools) used to facilitate construction, installation or maintenance and are removed after the completion of the work. Examples include chain blocks, winches, compressors, ladders, elevated work platforms, explosive power tools, hand operated battery mobile lift and transfer equipment, accessories and attachments and the like.

Requirements -

That to which equipment and procedures and their outcomes must conform and includes statutory obligations and regulations and *standards* called-up by legislation or regulations. Requirements may also include:

- statutory regulations
- codes of practice
- job specifications
- transport documentation
- *standards* called-up in specifications be they Australian/New Zealand or International
- procedures and work instructions
- quality assurance systems
- manufacturers' specifications
- maintenance manuals, schedules and specifications/standards
- circuit/cable schedules
- design specifications
- customer/client requirements and specifications
- specified underpinning knowledge (specified in units' Evidence Guides)
- National and State guidelines , policies and imperatives relating to the *environment*

Representative range -

That which requires a sufficient body of evidence undertaken across a range of activities and work functions to be present in order that a valid, reliable, fair and timely judgement about an individual's performance for attributing competence can be made.

Sample audits -

A sample audit that is carried out to ascertain whether: a) appropriate procedures have been followed to ensure the safety of the area; b) equipment, systems and installation conform with the design specification and are free from damage; c) any modification have been properly documented and appropriately approved.

Servicing -

Undertaking routine inspection, repair and maintenance of circuits, systems or *apparatus*.

Specialisation -

Describes the work environment in which the core technical requirements of learning are to apply.

Standards -

Technical documents, which set out specifications and other criteria for equipment, materials, and methods to ensure they consistently, perform as intended. The s*tandards* referred to in this competency standard are those published by Standards Australia or in joint venture with Standards New Zealand. Competency in the use of other technical standards may be required in industries not restricted to Australian *requirements*. For example, shipping and off-shore petroleum industries are subject to standards agreed to by underwriters and enterprises or some other international convention.

Statutory Authority -

The person or body responsible for the implementation of legislation.

Sustainable Energy Principles and Practice -

Sustainable Energy Practice refers to workplace actions that contribute to the reduction of greenhouse gases. These are caused by the combustion of fossil fuels such as coal and gas. As most electricity is generated using fossil fuels, a reduction in the unnecessary use of electricity reduces the production of greenhouse gases. Also, most materials used in the workplace are manufactured using electricity or gas, so recycling and reducing the wastage of these materials also helps. There is a worldwide commitment to reducing greenhouse gases, which are considered to contribute to global warming. This User Guide promotes workplace strategies to assist in achieving the same goals.

Sustainable Energy Practice is closely related to the 'environment'. Sustainable energy practice aims to reduce the amount of wastage in electricity and other forms of energy that lead to the production of greenhouse gases. Many of the principles and practices that apply in the workplace also apply in the home and the general environment. These include:

- examining work practices that may use excessive electrical energy
- reducing energy by using energy efficient machines and appliances (eg. star ratings)
- switching off devices such as lights, machines and computers when not in use
- using power-save devices, such as those incorporated in photocopiers, business machines and the like
- replacing incandescent lamps with compact fluorescent lamps
- using natural light to replace artificial light
- regularly cleaning air conditioner filters
- closing windows and doors when climate control units are used
- insulating dwellings, offices and workplaces and preventing draughts
- using reflective curtains to control heat
- using natural or artificial shade to control sunlight
- using solar water heating
- using automatic processes to manage energy usage
- reusing materials used in construction, engineering and manufacturing
- recycling waste materials
- driving motor vehicles and other machines with care
- using natural gas for heating rather than oil or coal based fuels

- using devices to reduce water usage
- checking for leakage in hot water system pressure relief valves and elsewhere in plumbing systems
- sharing information about energy conservation with other workers

System -

A group or combination of inter-related, inter-dependent or interlocking elements forming a collective entity. Includes *circuits, apparatus, equipment* and the like.

Termination -

The act by means of which an electrical connection to an apparatus is established; specifically a prepared joint or connection between a cable, cord or conductor and a point in an electrical circuit such as a terminal or connection point. Such terminations include soldering, crimping, clamping, wire wrapping, insulation piercing/compression.

Testing devices -

Devices and instruments used to ensure safety requirements and operational functions are met, and to diagnose faults in apparatus, circuits or systems.

Utility -

The provision of energy services such as power, water, gas and telecommunications. In the case of UTE NES013 A it applies specifically to remote area essential services operations.

Wiring systems -

Permitted cables, enclosures, supports and *accessories* for power, measurement, control or communications purposes. (See also *Category*)

Work clearances -

Includes any system of permissions and notifications for safely working on or removing equipment/apparatus for service.

Additional glossary terms related to electrical equipment in hazardous area units of competency

Actions -

To limit risk of an explosion can include organisational arrangements for reporting and rectifying non-conformances; shutting down plant or machinery under emergency conditions; evacuating a hazardous area; reporting non-conformances and conditions of plant and machinery; monitoring the hazards area for presence of an explosive atmosphere; meeting OH&S obligations.

Authority -

Refers to documents from which explosive characteristics of products are obtained and include:

- recognised standards publications
- manufacturers product data publications

Certification documentation -

A formal certificate issued by a certifying body stating that an item of equipment/apparatus conforms to particular requirements of a standard. Documentation may include details of limitations of use and manufacturer's specifications and drawings.

Certification of equipment -

A means of verifying that equipment intended for use in a hazardous area complies with the accepted standards.

Classification of hazardous areas -

A concept, which is accepted internationally, of dealing with the risk of fire and explosion by area classification.

Competent person -

A person who has the relevant competencies described in this competency standard.

Electrical equipment -

Equipment used for power, measurement, control or communication purposes.

N. **Pre-assembled** Type 1 and Type 2 cold cathode Neon signs only.

P. A **single enclosed control device** contained in an enclosure which is not part of a Control Panel or Distribution/Switch Board.

Q. **Control devices,** e.g. solenoids, limit switches, pressure switches, thermostats.

R. **Electrical heaters,** such as water heaters, duct heaters, heaters incorporated as part of a machine or appliance. e.g. moulding machines, cooking appliances and the like.

S. Motors – refers to a single or three phase motor incorporated as part of plant or machinery. For example, a chiller unit, automated production and assembly unit, NC Machine; or independent motors driving such things as pumps, conveyors and other similar parts of plant and machinery.

Engineering assessments -

Using measurements, calculations and test results to determine whether an item of equipment complies with the relevant standard.

Equipment marking -

Information with regards to certification that is required to be marked on each item of equipment incorporating an explosion-protection technique.

Explosion properties of hazardous materials -

- for gases, vapours and mists; vapour pressure; boiling point; flash point; ignition energy; explosive limits relative to vapour density; minimum ignition energy
- for dusts; layer ignition temperature; cloud ignition temperature; minimum ignition temperature

Explosion-protection -

Technique of protection which is applied to equipment or parts of equipment to prevent the ignition of flammable vapours and gases or combustible dusts in hazardous areas. See *Explosion-protected equipment*.

Explosion-protected equipment - Techniques

Equipment using the technique which is applied to equipment or parts of equipment to prevent the ignition of flammable vapours and gases or combustible dusts in hazardous areas. Such equipment employs one or more of the following endorsed techniques:

T. Mixed explosion-protection techniques - Ex mixed: e.g. the use of one or more explosion-protection techniques for the following sub-endorsements. See *explosion-protection*.

- T1 – Ex "pD" – Pressurisation, dust
- T2 – Ex "mD" – Encapsulation, dust
- T3 – Ex "iD" – Intrinsic safety, dust

U. Pressurised enclosure - Ex p: e.g. rotating machines; specific products

V. Dust-exclusion ignition-proof - DIP: e.g. rotating machines; equipment within (DIP) enclosures

W. Non-sparking - Ex n: e.g. rotating machines; equipment within Ex n enclosures

X. Intrinsic safety - Ex i: e.g. specific products

Y. Increased safety equipment - Ex e: e.g. rotating machines; enclosures, equipment within Ex e enclosures

Z. Flameproof enclosure - Ex d: e.g. rotating machines; enclosures (eg. junction boxes; light fitting; stop-start statics); equipment within enclosures

Encapsulation - Ex m

Oil immersion - Ex o

Purging - Ex pl

Sand-filled - Ex q

Special protection - Ex s

Ventilation - Ex v

Hermetic sealing - Ex h

Functions and process equipment -

Activities that produce a potentially hazardous area and the equipment used in such activities.

Gas groups -

Classification of electrical equipment for use in gas or vapour atmosphere according to groups and sub-groups of gases and vapours.

Hazardous area documentation -

Auditable documentation that shows that a hazardous area has been appropriately classified and the electrical equipment complies with the appropriate certification and other explosion-protection requirements specific to the site.

Under Australian/New Zealand Standards or Codes these records are referred to as a 'Verification Dossier' and include:

- Hazardous area classification drawings and justifications
- The explosion-protection systems design drawings/specifications
- Certification documents for each item type of explosion-protected equipment
- Inspection, testing and maintenance schedules and reports
- Re-classification and authorised modifications documentation, where applicable
- Competent persons

Hazard and risk assessment -

Any recognised methodology of identifying hazards and assessing risks such as 'hazard and operability study' (Hazop) and 'fault tree analysis' (HAZAN).

Hazardous materials -

Flammable gases and vapours and combustible dusts.

Inspection, close -

An inspection which encompasses those aspects covered by a visual inspection and, in addition, identifies those non-conformances, (eg loose fasteners), which will become apparent when access equipment, (eg steps), and tools are used. Close inspections do not normally require an enclosure to be opened or equipment de-energised.

Inspection, detailed -

An inspection which encompasses those aspects covered by a close inspection and, in addition, identifies those non-conformances which only become apparent when an enclosure is opened up, or by use of tools and test equipment.

Inspection, maintenance schedules -

A program of periodic inspections and maintenance that follow set procedures and check lists for the purpose of ensuring the integrity of the explosion-protection and to comply with *requirements.* Details of a schedule will vary depending on the nature of the explosion-protection techniques used and environmental conditions.

Inspection, periodic -

Inspections of all equipment carried out on a routine basis, usually as part of scheduled maintenance.

Inspection, sample -

Inspection of a portion of installed equipment for the purposes of monitoring the effects of environmental conditions, vibration, inherent design weakness and the like.

Inspection, schedule -

A formal arrangement for conducting inspections which details the extent, grade and frequency of the inspections and the explosion-protected characteristics and compliances to be checked.

Inspection, visual -

An inspection which identifies, without the use of access equipment or tools, those non-conformances which are apparent to the eye.

Installation -

Explosion-protected equipment, wiring and other required items as they are fixed in place and connected as necessary to operate as intended.

Integrity of explosion-protected equipment -

Aspects of the equipment design and use that afford explosion-protection.

Load and duty requirements -

Wiring systems include: sufficient current-carrying capacity; maximum permitted voltage drop is not exceeded; temperature limits are not exceeded under normal or fault conditions.

Non-conformances -

Visual damage or corrosion of equipment and wiring and loose or missing fasteners.

Non-conformances and faults -

Equipment or wiring that does not conform to the design specification or other requirements.

Other items -

Those items that are not in themselves explosion-protected but have an influence on the integrity of the explosion-protection technique used. For example, an overload device for a motor or associated equipment in the case of intrinsic safety technique.

Pre-commission testing -

- tests specified by *requirement*, such as, performance and setting of protection devices and systems, earth loop impedance, insulation resistance, and earth continuity
- equipment connection and operation tests

Process specialist personnel -

To responsible persons with expertise in the technical aspects of the activities that produce the explosive hazard and include chemical engineers, process engineers, mining engineers, safety managers and the like.

Re-certification -

The submission of previously certified equipment to an approved testing body or authority to determine whether the equipment complies with the accepted standards after modification or where original certification is not fully known.

Recommended actions -

- non-connection of supply until a non-conformance or fault is rectified
- notice of period in which a non-conformance or fault is to rectified
- other actions within the scope of statutory regulations

Regulatory or statutory authority -

The person or body responsible for the implementation of legislation relating to the handling, processing or storage of materials constituting a hazard.

Servicing -

Maintaining, fault finding and repair of equipment, plant and machinery.

Special tools, equipment and testing devices -

Tools for the removal of enclosure covers and connecting conductors; measuring devices such as feeler gauges and micrometer; gas and vapour sensors; electrical testing devices approved for use in a particular hazardous area.

Specifications -

Can include: documentation of hazardous material; documentation of process pressures and temperatures; process flow diagrams.

Standards -

Technical documents which set out specifications and other criteria for equipment, materials and methods to ensure they consistently perform as intended. The *Standards* referred to in this competency standard are those published by Standards Australia or in joint venture with Standards New Zealand. Competency in the use of other technical standards may be required in industries not restricted to Australian/New Zealand *requirements*. For example, shipping and off-shore petroleum industries are subject to standards agreed to by underwriters and enterprises or some other international convention.

Temperature class -

Classification of electrical equipment according to its maximum surface temperature.

Verification dossier -

See *hazardous area records.*

Zones –

The zones into which hazardous areas are classified based upon the frequency of the appearance and the duration of an explosive gas atmosphere.

TRAINING STANDARDS

Part B

ASSESSMENT GUIDELINES

Part B - Assessment Guidelines

Introduction

1.0 General

The purpose of assessment is to confirm that an individual can perform to those standards expected in the workplace as expressed in the relevant endorsed competency standards.

These Guidelines contain five sections:

1. Assessment System Overview
2. Assessor Qualifications and Training
3. Guidelines for Designing Assessment Materials
4. Guidelines for Conducting Assessments
5. Sources of Information on Assessment

The Guidelines are to be used by all those involved in the Assessment of Electrotechnology Industry competencies. This includes:

- State Training and Recognition Authorities who will use the Guidelines as (1) the industry's advice to government: and (2) the minimum requirements to be satisfied by Registered Training Organisations.
- State/Territory Industry Training bodies who will use the Guidelines to underpin their relationship with, and support for, the State training and recognition authorities' quality systems.
- Registered Training Organisations who will issue qualifications based on the requirements outlined in this National Training Package.
- Individual candidates/trainees who will use the provisions of the Guidelines to establish their responsibilities and to protect their prerogatives.

2.0 Outline of Part B – Assessment guidelines

Information in Part B outlines how the assessment guidelines inform an RTO about the infrastructure requirements they will need to enable them to carry out assessment activities related to the National Electrotechnology Training Package. It includes such things as assessment systems, the role of Registered Training Organisations, assessment pathways, recognition arrangements, assessor qualifications and sources of information.

3.0 Assessment system overview

3.1 Benchmarks for assessment

Within the Electrotechnology Industry, the benchmark for all competency-based assessment is the *Unit of Competency*. By way of supporting, and reinforcing, both the concept of competency, and the Unit of Competency, as the benchmark for the National vocational education and training system, the Electrotechnology Industry embraces the following tenets:

- wherever practicable, summative (or final) assessment is to include the application of the competency in the normal work environment or, at a minimum, the application of the competency in a realistically simulated work environment. It is recognised that, in some circumstances, assessment in part or full can occur outside the workplace.
- all persons may claim formal recognition for an assessment of an individual unit of competency, or a group of units.
- all persons have the right to have relevant competencies recognised through the most expeditious assessment system and method.

  The Units of Competency which form the benchmarks within the Electrotechnology Industry are the:

- National Electrotechnology Industry Competency Standards – Part A of this package.
- Imported National Units of Competency; RALC (revised) and EEHA, which have been considered appropriate by the Electrotechnology Industry for inclusion and recognition towards the Qualifications Framework.

An index of developed units and the detailed units are contained in Part A of this National Training Package.

3.1.1 Assessment systems and strategies

Within the Electrotechnology Industry there are three main assessment systems.

Sampling.

This is an approach in which evidence of competency is derived from a limited sample of performance. Technical/application skills are normally assessed by practical measures and knowledge is assessed by conventional written or oral questioning.

Profiling.

This requires the progressive collection, documentation and judgement of evidence, often over an extended period of time. In a competency system, the focus for the evidence *is to* be set against the critical aspects detailed in the competency unit, and the collection process staged against known and pre-planned workplace occurrences. Profiling requires a series of audit assessments and/or a final holistic assessment event.

Portfolio

This requires the progressive collection or build up of *indirect* evidence as to the individual's competency. It may include certificates of attainment from elsewhere, suitably focused references and testimonials, formal project appraisals, work records and any other evidence which is current and relevant to the competencies sought.

These Assessment Systems are not mutually exclusive and a combination approach may be followed. The selection of an approach or system will be acceptable to the industry if the outcome is valid, the requirements of the competency are satisfied, the approach supports industry-wide consistency and the costs are acceptable to the industry.

All systems and strategies may be used to gather evidence and assess performance. The assessment processes and practices must satisfy the principles of assessment which are:

- **Validity.** The assessment instruments and items must be designed and administered in a manner which ensures they measure the intended performance requirement.
- **Reliability.** Assessment practices will undergo constant monitoring and review to ensure consistency in the application of process and interpretation of evidence.
- **Flexibility.** A range of assessment instruments and items should be made available and, where appropriate, the time and place of assessment should be determined to suit the availability of resources, assessors and learners.
- **Fairness.** Assessment methods and practices shall be equitable to all individuals and procedures and criteria applied to the judgement process will be made clear.

Additionally, assessment processes must satisfy the requirement for currency in relation to evidence of competency. Currency has two dimensions:

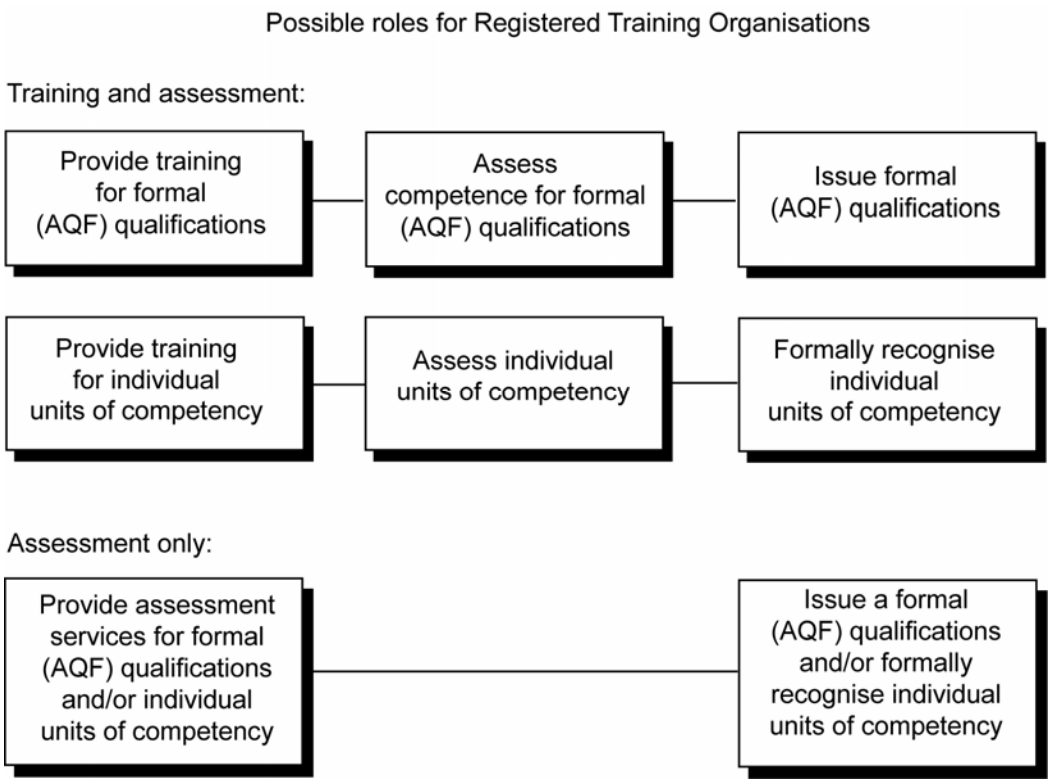
1. Currency in terms of technology and/or processes; and

2. Currency in terms of recency of application.

Clearly if there has been a recent and quantum change in technology, then evidence of actions before the change is unlikely to reflect the required currency. Similarly, if the individual claiming competency has not performed/applied that competency for extensive periods of time then documentary evidence would not suffice as a basis of assessment.

3.2 Role of a registered training organisation

A Registered Training Organisation is one which has been formally recognised by State/Territory training and recognition authorities as being capable of providing quality outcomes for a specified area and range of services. The role of Registered Training Organisations will vary depending on the outcomes being pursued and the services offered. For the Electrotechnology Industry, these services are divided into 3 possible roles:



The Registered Training Organisation is to be responsible for all aspects of assessment. The assessment must cover the critical aspects of evidence (assessment) detailed in each Unit of Competency. In addressing these critical aspects, and ensuring reasonable consistency, the assessment is to ensure that:

- the individual satisfies the requirements in terms of underpinning knowledge and skills so that their ability to transfer the competency to differing circumstances may reasonably be inferred.
- the individual is competent to safely perform the practical applications required.

The RTO is also responsible for the issue of formal recognition in the form of National Qualifications or Statements of Attainment, and where regulatory requirements apply, enter relevant information into an individual Industry Skills Passport. Where the industry prefers the use of an industry Skills Passport this may be negotiated directly with RTOs. The RTO will therefore:

- issue the National Qualification based on individuals having been assessed as competent for the qualification and all the Units of Competency which constitute the qualification. (See Part C of this National Training Package), *or*

- issue formal recognition (Statements of Attainment) in respect of individual Units of Competency for which candidates have been assessed and found competent.

A Registered Training Organisation may engage external appropriately qualified organisations and individuals to undertake aspects of the training and/or assessment process on their behalf. External organisations need not be Registered Training Organisations in their own right. However, they need to meet the quality assurance measures as defined by the Registered Training Organisation issuing the qualification or recognition. In this way the Registered Training Organisation maintains, in accordance with any requirements determined by State Training Authorities, the overall responsibility for the quality assurance arrangements.

Consistent with the criteria established by State Training Authorities, Registered Training Organisations are responsible for the implementation of the quality assurance arrangements included in these guidelines.

3.3 Assessment pathways

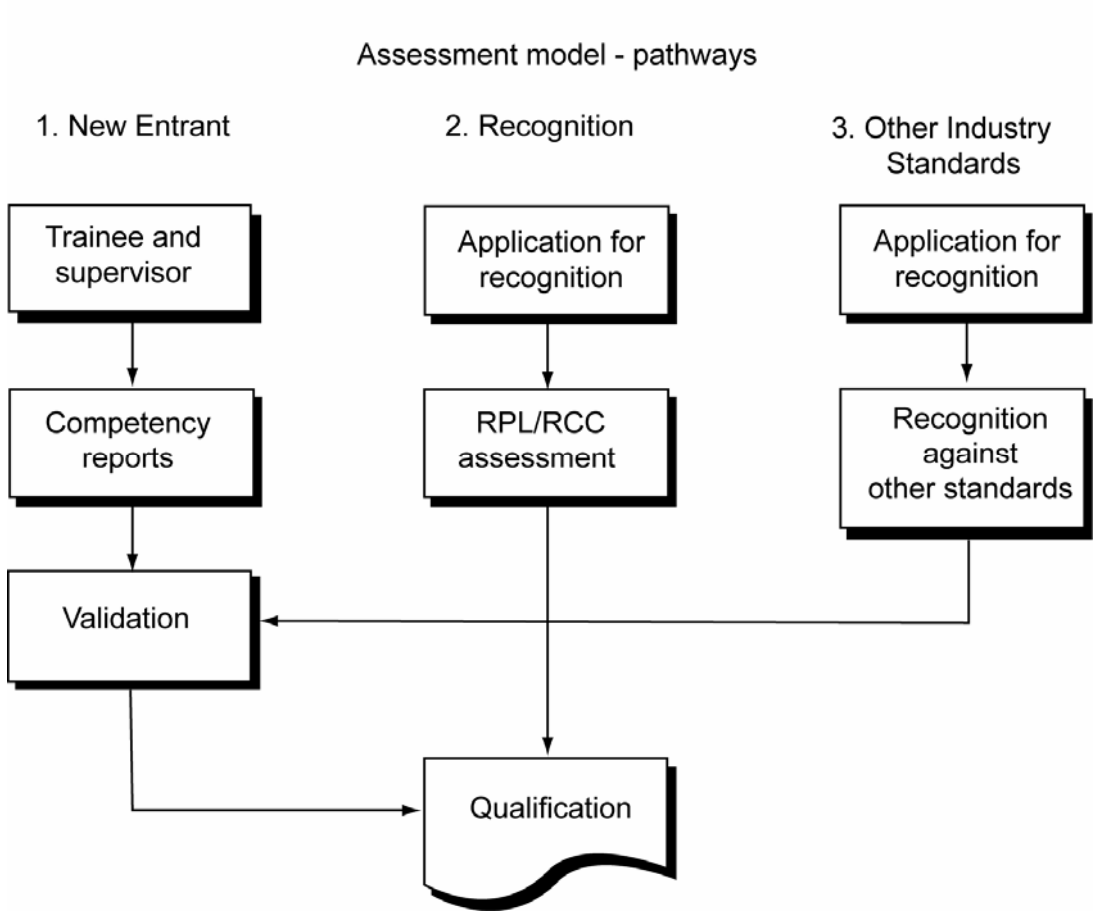
There are three Assessment Pathways that have been identified by industry which provide recognition of individual Units of Competency or groups of Units that make up Qualifications or Statements of Attainment. From an Industry perspective, assessment is to lead to formal recognition of the Industry's benchmark competencies or formal recognition of competencies from other industries. Formal recognition may be for individual competencies or for groups of competencies which combine to satisfy the requirements of a National Qualification.

The Assessment Pathways are therefore threefold:

Pathway 1: New entrant competency development

Pathway 2: Recognition of currently held competencies or prior learning and workplace experience

Pathway 3: Recognition of other currently held competencies (other industry standards)

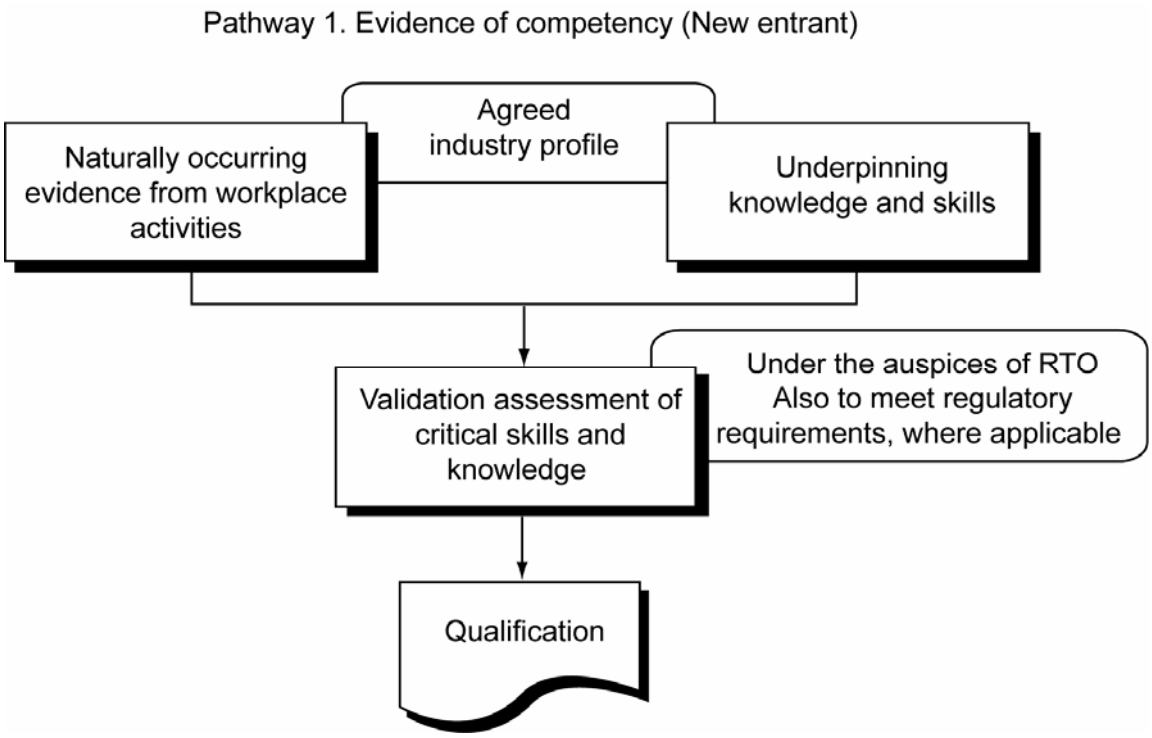


Pathway 1: New entrant competency development

This pathway is for individuals who are undertaking an industry endorsed Model Training Program. The users of this pathway may be contracted employment based employees who are generally new apprentices or who undertake an approved training program in an institutional environment to achieve the same outcome.

Evidence of competency

In this pathway evidence required to determine competence for the issuance of the qualification or Statement of Attainment is to be in accordance with **3.1.1 Assessment systems and strategies** contained in Part B of this Package. The evidence must be sufficient in quality, quantity and type and be gathered in an on-going basis in a timely and accurate manner from several sources, such as, workplace and educational experiences based on the approved industry training plan in which individuals are involved.



Pathway 2: Recognition of prior learning/current competencies (RPL/RCC)

This pathway is for those who may have acquired skills and knowledge in relevant Units of Competency outside formally recognised processes. The users of this pathway will include applicants from overseas and applicants who have developed skills in allied industries but who have no formal recognition in respect of industry standards or qualifications.

An existing national mechanism for the assessment and recognition of competencies is through the Tradesmens' Rights Regulation Act which is administered by Trades Recognition Australia (TRA), which is part of the Commonwealth Department of Industrial Relations. TRA's activities as the "relevant Australian authority" for trade skills assessment under regulations to the Migration Act, are consistent with and are accommodated by this pathway.

The Trades Recognition Australia process mainly operates to provide formal recognition of the competencies of migrants, competencies which have been developed by structured training and or work experience in overseas countries. However, it is also an important mechanism for the assessment and recognition of the competencies of unemployed people who may not have access to the profiling pathway.

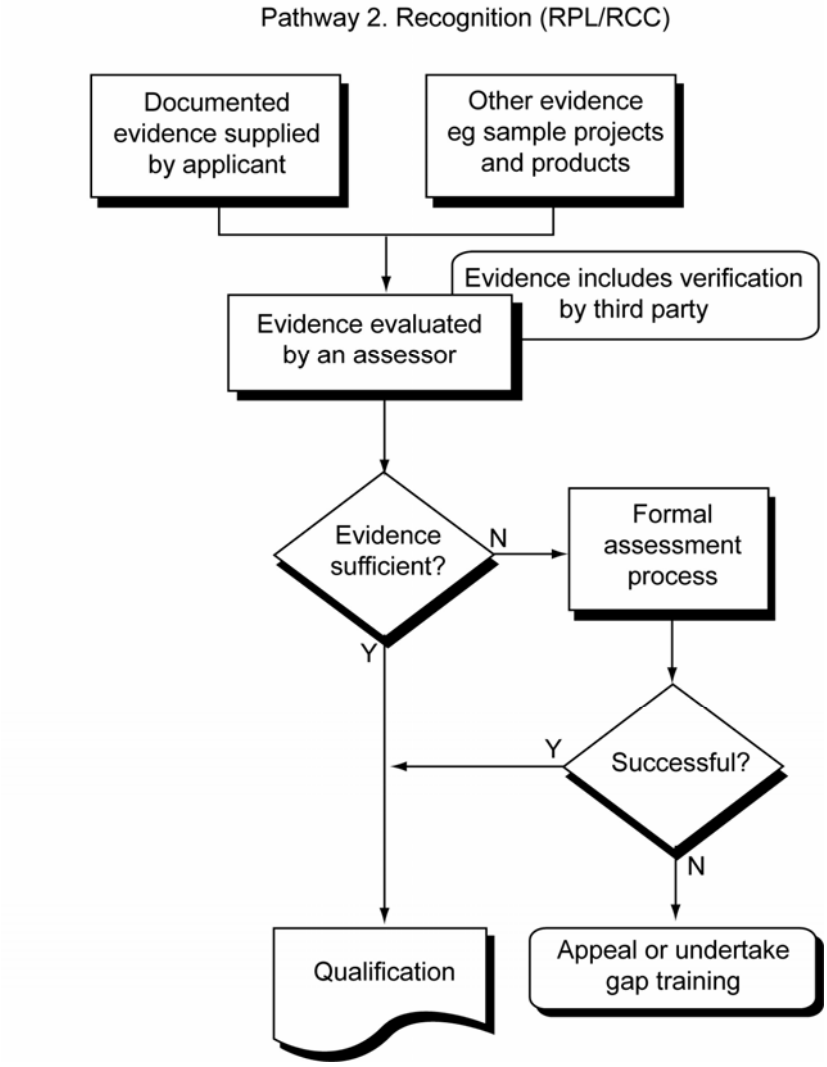
Evidence of competence

In this pathway many types of evidence are able to be used to determine competency for the issuance of Qualifications or Statements of Attainment. The evidence may come from such things as records of previous relevant work experience. This type of evidence will need endorsement by a supervisor/mentor skilled in the units for which recognition is sought. Evidence may consist of portfolios which include projects or products completed for other purposes or from non registered training programs or ad hoc prior experience.

Industry would expect that this evidence will be assessed by the Registered Organisation (or their nominee – a qualified industry assessor) and a judgement made. The result will be either that the applicant is deemed competent for the Unit/s of Competency or gaps are identified and noted. The applicant can either accept the judgement, pursue gap training or elect to appeal the decision.

Evidence used in the judgement process may come from a variety of sources including such things as a personal portfolio, curriculum vitae, interview, comments by peers or employers and challenge tests.

The recognition of a subset of the Units of Competency forming a Statement of Attainment within a Qualification would generally require individuals to complete the additional Units in order to attain the appropriate Pathway that provides credit. This may be developed by the Registered Training Organisation in consultation with respective stakeholders.



Pathway 3: Recognition of other industry/enterprise standards

This pathway is for individuals who have developed skills based on other nationally recognised industry or enterprise Competency Standards and who have received formal recognition in Unit(s) of Competency from these areas.

Recognition of Units of Competency between industries is through an agreed mapping process that ensures equivalence of outcomes. The mutual recognition of Units, as part of any mapping arrangements, is the responsibility of the parties who have the responsibility for maintaining the competency standards. In this instance EE-Oz Training Standards and any other party.

Registered Training Organisations should contact EE-Oz Training Standards regarding mutual recognition agreements.

Evidence of competence

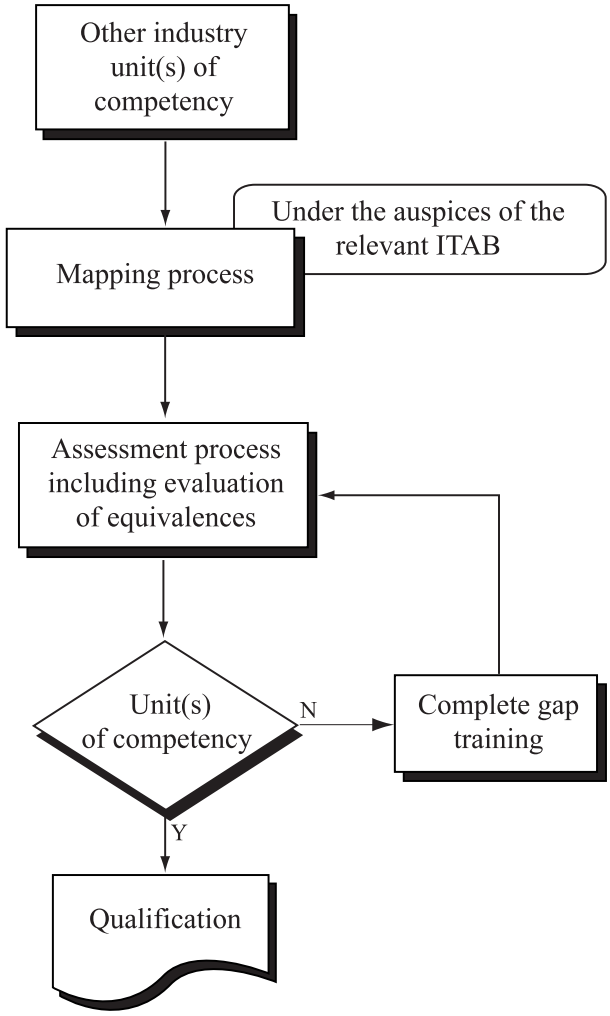
In this pathway evidence will be based on the mapping of Unit(s) of competency in other Industry Competency Standards against the Unit(s) in the National Electrotechnology Training Package, for which formal recognition is sought. The applicant would be required to supply details of the Unit(s) held and the Unit(s) sought, including any assessment reports to the Registered Training Organisation, or their appointed nominee, for a determination.

This evidence will be assessed by the Registered Training Organisation (or their nominee) and a judgement made. The result will be either that the applicant is deemed competent for the Unit(s) or gaps are identified, advised and noted. The applicant can consider the judgement, pursue gap training or appeal the decision.

Evidence used in the judgement process is based on the individual's records of achievement relative to the Units of Competency for which recognition is sought.

The recognition of a subset of the Units of Competency forming a Statement of Attainment within a Qualification would generally require individuals to complete the additional Units or part thereof in order to attain the full qualification. An appropriate Pathway that provides credit may be developed by the Registered Training Organisation in consultation with respective stakeholders.

Pathway 3. recognition of other industry standards



3.4 Recording assessment outcomes

Registered Training Organisations are to provide all relevant assessment information to regulatory authorities, or their agents, pertaining to National, State or Territory licensing or certification requirements.

3.5 New apprenticeship opportunities

New apprenticeship initiatives can be arranged by Registered Training Organisations by designing relevant training programs or utilising the industry endorsed Model Training Program which will lead to the Qualifications detailed in Part C of this National Training Package.

4.0 Assessor qualifications and training

The integrity of the Electrotechnology Industry assessment processes is centred on the need for all assessment to be conducted under the direction or the authority of a Registered Training Organisation using qualified assessors who may function with or within the Registered Training Organisation.

Within an assessment process, responsibility for some activities may be delegated and it is therefore not necessary that every aspect of assessment must be personally and directly attended to by a qualified assessor. For example, in a long term profiling process the qualified assessor will establish the system and identify the evidence required. They may then cause the evidence to be gathered by others after which they will examine the evidence and make judgments.

The partnership between assessors and other competent persons is essential if the system is to function. However, technical assessment responsibility and systems accountability may only be exercised by a Registered Training Organisation using qualified assessors.

4.1 Assessor qualifications

Assessments against the competencies in this National Training Package will be carried out in accordance with these endorsed guidelines. The guidelines include the necessary qualifications for those conducting assessments and provide for those situations where more than one person may contribute to the assessment and where the required technical and assessment competencies may not be held by any one person.

The assessment for competence

Assessors are to be competent in the competencies which they are to assess or are to be assisted by an appropriate subject matter expert who is currently competent in the unit being assessed (This may also include such things as language literacy and numeracy (LLN), environmental, occupational health and safety (OHS), equity, etc).

Assessors (and their subject matter expert) are to know current industry practices for the job or the role against which the performance is being assessed, and practice the necessary interpersonal skills required in the assessment process.

All persons required to *plan, carry out or review* assessment related matters are to be currently competent against the competency standard contained within the Assessment and Workplace Training National Training Package:

Development of assessment instruments

Competency against the required National Standards is to be attained through approved processes, which ensure that:

- the candidate satisfies the theory underpinning the Unit(s).
- the candidate satisfies the practical application required of the Unit(s).
- the approved provider is satisfied that the candidate will be capable of undertaking assessments in the intended environment in which the unit applies.

4.2 Using qualified assessors

In keeping with the above policies, assessment is to be under the authority of a formally qualified assessor. Within this constraint, the Registered Training Organisation may adopt any or all of the following processes:

- using a workplace assessor who is competent against the assessor competency standards contained within the Assessment and Workplace Training National Training Package and the relevant industry vocational competencies.
- using a workplace assessor who is competent against the assessor competency standards contained within the Assessment and Workplace Training National Training Package and who has ready access to another person who is competent in, and can advise the assessor on, the relevant vocational competencies to at least the level being assessed.
- using an assessment panel which includes at least one person who is competent against the assessor competency standards contained within the Assessment and Workplace Training National Training Package as well as at least one person who is competent in the relevant vocational competencies to at least the level being assessed.
- using an external assessor who is competent against the assessor standards contained within the Assessment and Workplace Training National Training Package but with the assessment evidence being collected, utilising industry endorsed assessment procedures, by a workplace supervisor who has the relevant vocational competencies to at least the level being assessed.
- using a workplace supervisor, with the relevant vocational competencies to at least the level being assessed, who utilises industry endorsed assessment procedures with the outcome being validated by an externally qualified assessor who is competent against the assessor standards contained within the Assessment and Workplace Training National Training Package.

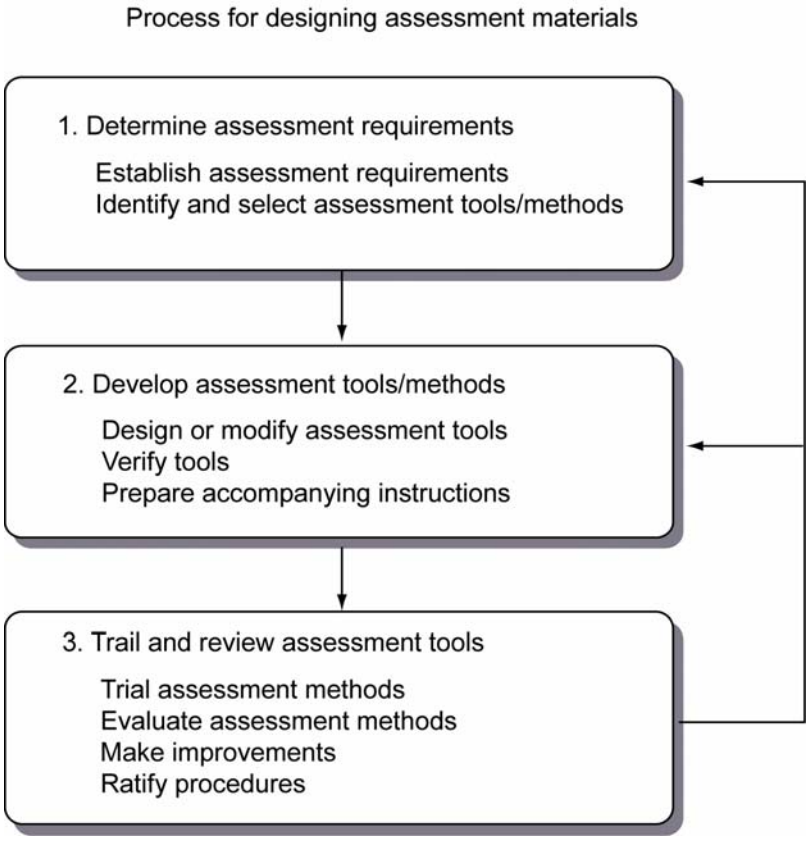
Notwithstanding, the industry would expect that in all instances the Registered Training Organisation will retain the responsibility of managing the Training Program, the ultimate attributing of competence against Unit(s) of Competency using qualified assessors and the Issuance of Qualifications and/or Statements of attainment. The process should be undertaken in accordance with the recognition processes defined by relevant training authorities.

5.0 Guidelines for designing assessment materials

Assessment Materials are developed, designed and implemented by appropriately authorised and competent Electrotechnology Industry assessors. The materials may range from relatively straight forward questions/answers and task tests to quite elaborate simulations for assessing concepts and values. The assessment materials need to facilitate the process by:

- detailing the personnel and material preparations required to support the assessment process.
- establishing and/or confirming the circumstances under which the assessment is to take place.
- detailing the evidence to be collected and the method(s) to be used to do this.
- providing for the systematic review/analysis of the evidence and for the making of logical and supportable judgments.
- providing the means for the recording of the process and the judgments
- providing a basis for post-assessment.
- providing counselling and guidance for the candidate.
- Identify specialist technical advice related to such things as OHS, LLN, environmental and equity matters etc.

5.1 Assessment material design process



Determine assessment requirements

Establish assessment requirements - in development of tools and methods the assessor will need to determine the range of methods appropriate to the assessment context and the characteristics of the person being assessed. The assessor may use the following questions when designing the assessment method:

- Is the data gathering process sufficient, timely, valid and reliable to ensure the decision about competence relates to the overall requirements of the Unit?
- Do you always need to assess real work?
- How is the critical evidence specified?
- How many assessment tasks are required to collect the critical evidence of competency?
- Which assessment tasks will provide broad coverage of the range of variables?
- Are there any skills that the candidate should have before they are assessed for the Unit?

Identify and select assessment tools/methods - the assessor will be required to identify and select the assessment methods consistent with Electrotechnology Industry assessment guidelines and procedures.

Develop assessment tools/methods

- **Design or modify assessment tools** - the assessor will be required to design or modify existing assessment tools so that their format, language, literacy and numeracy requirements are appropriate to the characteristics of the assessment context and the person being assessed.
- **Verify tools** - the assessor will need to verify the assessment tools which maintain validity but are easy to administer, and allow sufficient flexibility to meet the range of possible assessment contexts.
- **Prepare accompanying instructions** - the assessment system/process must be comprehensively and clearly documented so that the stages of assessment and their constituent parts may be observed and evaluated.
- The assessment materials must relate directly to the Unit of Competency and address the totality of the competency in a realistic and effective way.

Trial and review assessment tools

- **Trial assessment methods** - the assessor will be required to trial the assessment methods with a representative group of people similar to those who will ultimately be assessed.
- **Evaluate assessment methods** - the assessor will evaluate the assessment methods and tools for clarity, reliability, validity, fairness and cost-effectiveness.
- Once trials are conducted the assessor will need to seek responses from all parties and compile and analyse these responses.

- **Make improvements** - the assessor will modify the assessment tools based on the responses to the trials.
- **Ratify procedures** - the assessor ratifies, with relevant people in the Electrotechnology Industry, procedures of the evidence requirements, assessment methods and assessment tools and the processes used in developing them.

5.2 Assessment material requirements

Essential requirements to be met by assessment materials include the following:

- **Assessment of competency standards** - assessment must directly address the Unit of Competency and, within this, satisfy the *critical aspects of assessment* including the related performance criteria, range of variables and underpinning knowledge and skills.
- **Learning Outcomes or other curricula documents** - are not to be the focus of summative assessment unless their direct relationship to the Unit of Competency is formally proven and recorded.
- **Assessment of practical applications** - summative assessment of practical applications should, whenever possible and practicable, be conducted in a real work environment or in a realistically simulated work environment. Removal of the summative assessment from the real work environment should occur only to the extent necessitated by circumstances such as safety, noise, and access to the required work.
- **Assessment of underpinning theory** - summative assessment of the theory (knowledge) underpinning competency is to be sufficiently rigorous and searching to ensure that individuals comprehend why they are doing something, the options they may use to achieve the required goal, and the fact that they can recall and/or locate and interpret this information if it is needed at some other time.
- **Assessment of trainees with low language/literacy/numeracy skills** - assessment systems need to be capable of being applied in cases of low language/literacy/numeracy skills. Strategies to address assessment of those with low language, literacy and numeracy skills should be included in any Assessment Materials used by Registered Training Organisations, and be consistent with the quality assurance requirements of State Training Authorities for registration.

5.3 Range of assessment methods and their uses

Types of assessment

- **Direct observation** - observe the learner carrying out their usual practical tasks in the workplace. This may be accompanied by questions. Direct observation is probably the easiest and most convenient method of assessment.
- **Third party reports** - information provided from immediate supervisory or other appropriate persons. An external assessor may not have the opportunity to make multiple observations of a candidate over a period of time, unlike an

internal (in-house) assessor. The external assessor may obtain third party reports to supplement an assessment.

- **Demonstration and questioning** - candidate gives a demonstration of a practical task. If there is no opportunity to observe this competency in the standard work environment, the assessor may ask the candidate to provide a practical demonstration. The assessor can see both the process and the finished product.
- **Pen and paper tests and essays** - these are used to measure the extent of knowledge or may test problem solving capability. They can compliment practical demonstration.
- **Oral tests** - these can be an adjunct to practical demonstration.
- **Projects** - these tend to be unsupervised. The assessor uses the final product on which to base a judgement.
- **Simulation** - this may involve an off-site practical test. The actual tasks and conditions are similar to real life situations.
- **Portfolios** - these are used for assessing skills achieved in the past. They can include work samples.

Assessment methods must be appropriate to the situation. Learners can be encouraged to use these methods for self assessment. Combinations of these methods will be required for most situations (eg. observations and oral questioning).

The recommended assessment methods outlined above, to collect the various kinds of evidence required to determine the candidate's competency, are:

A - oral questioning

B - structured observation of work

C - indirect supporting evidence (supervisor's reports)

Not all the methods need to be used. For example, during the assessment period the assessor may find that they don't need all three methods to collect sufficient evidence. The assessor may also plan to use other, equally valid, combinations of assessment methods.

It is recommended that assessors use open questions in conjunction with direct observations to assess the candidate's ability to:

- apply relevant knowledge to the particular task.
- perform the required tasks safely and efficiently.
- handle unforeseen circumstances.
- recognise and solve problems associated with the task (which may not necessarily occur during the assessment).

It is recommended that supervisor's reports or verified calculations are used to confirm that workplace tasks have been completed on time and meet the required specifications. This is particularly relevant when the assessor may not be present for the total duration of the workplace task and/or the candidate works as part of a team.

5.4 Assessment instruments

Templates of Electrotechnology Industry model assessment instruments are as follows.

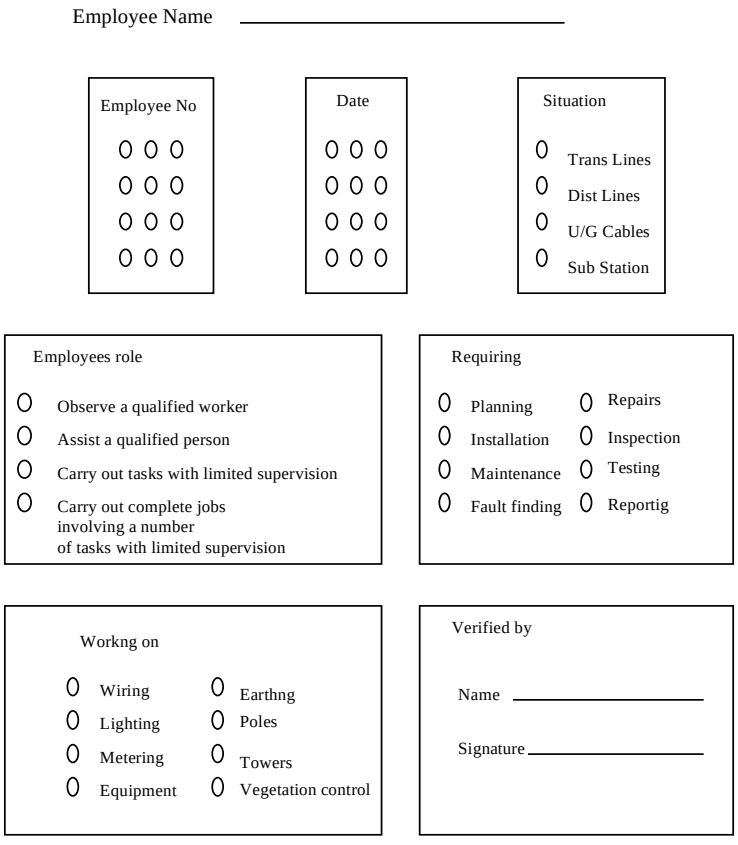
Sample assessment instrument to support a profiling model

Longitudinal approaches to assessment require extensive data that is reliably gathered and is in a form that can be consistently interpreted.

A machine readable data scan card, operating in conjunction with computer software, achieves this result. The fields printed on the card reflect the details outlined in the competency standards and the combinations available for learners to select from provide the means for identifying work experience.

Data gathered in this way encourages self assessment, eliminates bias and minimises the effects of low levels of literacy.

Work Experiece Card and Data for Inclusion in Profile System for Assessment
(Sample Only - details of fields to be determied by industry to accommodate enterprise requirements)



Sample assessment instrument to support a sampling model

This instrument can be used by itself or to audit the data gathered as part of a profiling model.

Unit:

Name of candidate:
Work area/contact number:
Name of workplace supervisor:
Name of assessor:
Date of assessment:

Notes for this Assessment Instrument Use

1. Designing the instrument

The questions and observation check-lists in this example were designed by analysing the performance criteria for the Unit and the accompanying Evidence Guide.

Practical assessment for the Unit may require the assessor to undertake additional tasks if the assessment of this cannot be fitted into the candidate's normal work cycle.

Part C "Supporting Evidence" may be required when the assessor is:

- unable to identify certain aspects of the work outcome.
- uncertain of the assessment decisions and requires additional evidence to back up their own judgement.
- not actually present to assess all critical aspects of the job.

2. Conducting the assessment

- the assessor should check whether the candidate has any literacy or numeracy problems before the assessment is conducted. For example, the assessor could ask the candidate to fill in the details on the cover sheet for the unit assessment instruments (ie. names, dates).
- to make sure that the candidate is ready for assessment, the assessor will need to ask questions that test underpinning knowledge before conducting the practical demonstrations. However, in some cases it may be more appropriate to ask particular questions during the actual performance of the workplace tasks.

3. Recording the assessment result

- the assessor will need to explain the outcome of the assessment to the candidate. The assessor and the candidate will need to complete, sign and date the result sheet.

Part A: Questions to assess underpinning knowledge

The candidate is to answer all questions.

Ask the candidate each question using the words listed below. You may clarify the question with the candidate but you must not provide assistance with the answers.

	Some suggested questions	**Satisfactory Response**	
		Yes	***No***

Feedback to candidate:

.....
.....
.....
.....
.....
.....
.....

Part B: Observation check-lists to assess practical skills

You should stop the assessment immediately if the candidate's work practices are unsafe.

Element 1

Practical skills	Competent	Not Yet Competent

Feedback to candidate:

.....
.....
.....
.....
.....

Element 2

Practical skills	Competent	Not Yet Competent

Feedback to candidate:

.....
.....
.....
.....
.....

Element 3

Practical skills	Competent	Not Yet Competent

Feedback to candidate:

.....
.....
.....
.....
.....
.....
.....
.....
.....

Element 4

Practical skills	Competent	Not Yet Competent

Feedback to candidate:

.....
.....
.....
.....
.....
.....
.....
.....
.....

When relevant components of other Units are assessed concurrently with this Unit, record the outcomes using the assessment instruments listed separately for those units.

Part C: Supporting evidence (including supervisor's report)

Element	Source of Evidence	Valid?
		Y/N
		Y/N
		Y/N
		Y/N
		Y/N
		Y/N
		Y/N
		Y/N
		Y/N

Supervisors report:

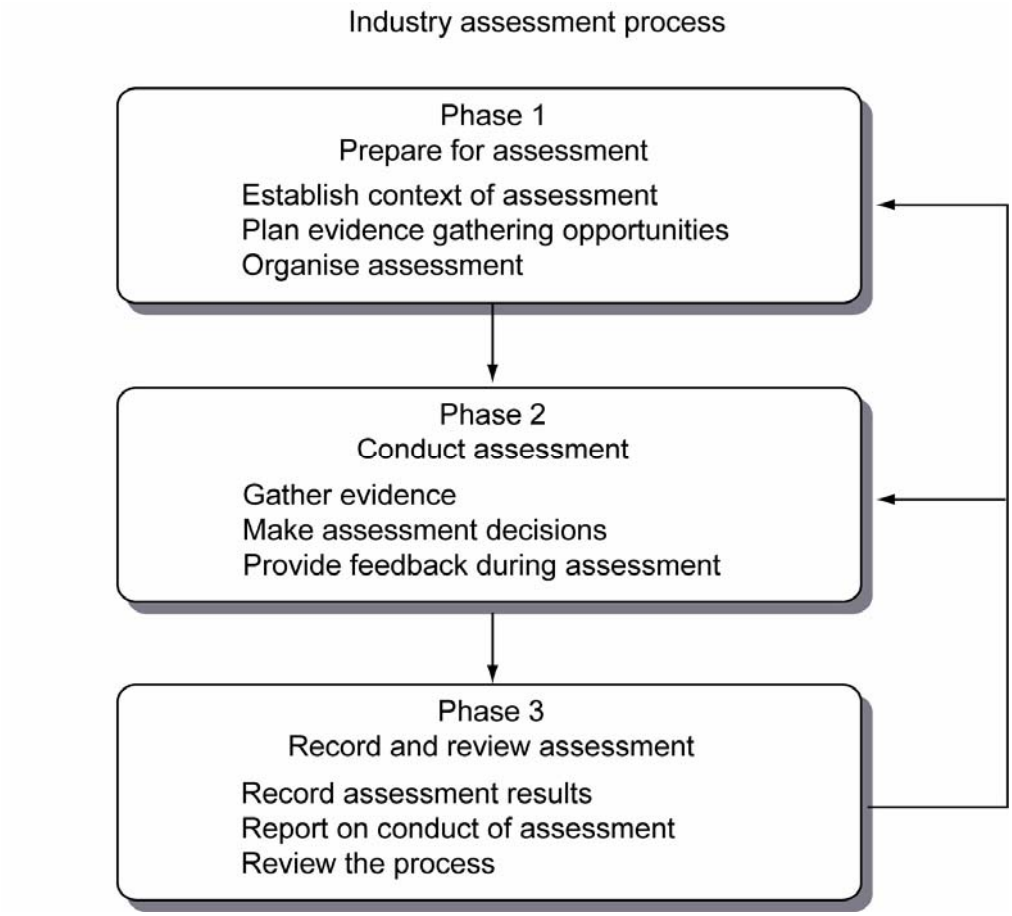
.....
.....
.....
.....
.....
.....
.....
.....
.....
.....
.....
.....
.....
.....
.....
.....
.....

Part D: Assessor's outcome for the Unit

Competency assessment result **Unit:**	
Name of candidate:	
The candidate was assessed as:	☐ **Competent** ☐ **Not yet competent**
Feedback to candidate:	
Signatures The candidate has been informed of the assessment result and the reasons for the decision.	_____ Signature of Assessor Date:
I have been informed of the assessment result and the reasons for the decision.	_____ Signature of Candidate Date:

6.0 Guidelines for conducting assessments

The flow chart below provides an overview for assessment within the Electrotechnology Industry. The flow chart outlines the process involved in conducting assessment in both the institutional and workplace context, and consists of three major components that each assessor will need to do:



6.1 Prepare for assessment

Establish context of assessment

- discuss and confirm the purpose of assessment with the candidate.
- identify the Competency Standards appropriate to the assessment including the relevant performance measures applying to assessment.
- discuss the Electrotechnology Industry/Enterprise assessment policy with the candidate. (They need to understand how the competencies to be assessed will fit in with the Industry Training Framework or Enterprise arrangements for training. The assessor should also understand what the candidate has done to acquire the knowledge and skills).
- explain and obtain agreement to the assessment procedure.

Plan evidence gathering opportunities

- identify opportunities to gather evidence of competence which occurs as part of the workplace activities.
- explain to the candidate what evidence will be looked at to constitute competency.
- choose the techniques that will be used to assess the candidate's knowledge and skill.
- identify the need to gather additional evidence which may not occur as part of workplace activities.
- ensure the planned approach to gathering evidence will provide sufficient, reliable, valid and fair evidence of competence.

Organise assessment

- obtain the appropriate resources. Practical assessment should preferably be conducted on site. However, if on-site practical assessment is not possible then off-site assessment at a mutually agreeable site could be appropriate. It can be part of the current work (ie. observation of current tasks) or a demonstration (ie. a simulated task).
- check the assessment environment permits fair, valid and reliable assessment and that it is safe and accessible.
- discuss the context and purpose of assessment arrangements and requirements with the person being assessed, and confirm that it is agreed and understood.
- inform the relevant people of assessment plans.

6.2 Conduct assessment

Gather evidence

- evidence is gathered in accordance with agreed competency standards and in accordance with Electrotechnology Industry assessment procedures using specified assessment methods and tools.
- document the evidence gathered in accordance with the assessment procedure.
- ensure evidence gathered is valid, reliable and consistent.

Make assessment decision

- evaluate the evidence gathered in terms of it's: validity; authenticity; sufficiency; currency; consistent achievement of the specified standard.
- make the assessment decision in accordance with the criteria specified in the assessment procedure.
- if in doubt, seek guidance from a more experienced assessor nominated in the assessment procedure or the risk of assessment is in question because insufficient critical skills and knowledge are being demonstrated, consider ceasing the assessment. This should include technical, OHS, LLN, environment.

Provide feedback during assessment

- candidate is put at ease throughout assessment and given clear and constructive feedback where appropriate.
- progress is discussed (if it is appropriate to the form of assessment being used).
- discussion is held with the candidate on methods of overcoming any gaps of competency revealed by the assessment.
- if appropriate, give guidance on training opportunities that could overcome any gaps revealed in the assessment.
- where appropriate, confirm with the candidate being assessed opportunities for reassessment and/or the Electrotechnology Industry appeal procedure available.

6.3 Record and review assessment

Record assessment result

- the assessment result is recorded in line with the Instrument's required details and record-keeping requirements.
- assessment records are stored by the assessor in a secure place to ensure both access to authorised people only and the confidentiality of assessment outcomes.

Report on conduct of assessment

- any disputed assessment decisions are recorded and reported promptly to those nominated by the Registered Training Organisation in the assessment procedure.
- where appropriate, report positive and negative features experienced in conducting assessments to the Registered Training Organisation.
- where appropriate, make suggestions for improving the process to the Registered Training Organisation.

Review the procedure

This needs to be done in co-operation with the candidates who have been assessed, but not necessarily as part of an individual assessment procedure. This will involve:

- reviewing the operations of the assessment procedure at the site.
- recording and reporting promptly any assessment decision disputed by the person being assessed to the Registered Training Organisation.
- making suggestions for improving any aspect of the assessment process to the Registered Training Organisation.

7.0 Sources of information on assessment

Information on assessment falls into four categories:

- Industrial Policy
- State/Territory Policy
- National Policy and Guidelines
- Process Information

Industrial policy.

The National and State/Territory ITAB's are custodians of industry policy. They have responsibility for the definition and implementation of this National Training Package in conjunction and co-operation with the relevant State or Territory recognition authority.

State/Territory policy.

The State/Territory training and recognition authorities have constitutional responsibility for national vocational education and training. They will, from time to time, issue policies and guidance on training and assessment issues.

National policy and guidelines.

National Policy and Guidelines are established under the auspices of the Australian National Training Authority and the relevant Commonwealth Department. This information includes:

- Competency Standards for Assessment, (September 1995)
- Guide to Competency Standards for Assessment, ANTA, 1997
- Standards Best Practice Manual, ANTA, 1997
- Guidelines for Training Packages Development, ANTA, 1997

Process information.

Process information covers all parts of the competency assessment process. It is published in books, periodicals, computer packages and increasingly on electronic information services.

7.1 Competency standards and evidence guides

Format and definitions:

- *Standards Best Practice Manual* (1997). Australian National Training Authority, ACTRAC Products Ltd (www.anta.gov.au)
- National Training Board (1992). *Policy and Guidelines*. (Second Edition), National Training Board: Canberra.
- National Occupational Health and Safety Commission Guidelines on Assessment of OHS, Competencies within Industry Competencies (www.worksafe.gov.au)
- EE-Oz Training Standards (www.ee-oz.com.au)

Sources:

Metal and Engineering Industry Training Package, Nov 1998	National Metal, Engineering and Related Services Industry Training Advisory Board (MERS ITAB)
Administration Training Package, Oct 1997	Administration Training Company GPO Box 1469, N. MELBOURNE VIC 3001
Frontline Management Competency Standards	Australian National Training Authority (ANTA) AMP Place, 10 Eagle Street BRISBANE, QLD 4001 (07) 3246 2300
Road Transport Industry Competency Standards	Transport and Distribution Industry Training Advisory Body c/- National Union of Workers 552 Victoria Street NORTH MELBOURNE , VIC 3051
Transmission and Distribution National Training Package – Part A, Competency Standards	EE-Oz Training Standards Ground Floor, 68 Campbell Street Surry Hills NSW 2010 (02) 9280 2566
National Building and Construction Industry Competency Standards	Construction Training Australia PO Box 650 CARLTON SOUTH, VIC 3053 (03) 9663 8066
Lift National Training Package – Part A, Competency Standards	EE-Oz Training Standards Ground Floor, 68 Campbell Street Surry Hills NSW 2010 (02) 9280 2566
Telecommunications Training Package	Information Technology and Telecommunications Industry Training Advisory Body (IT&Titab) Suite 3, 139 Queensberry Street Carlton South VIC 3053 03 9349 4955

7.2 Assessment instrument design

- *Guidelines for Training Package Development* (1997). Australian National Training Authority.
- Hagar, P., Athanasou, J. and Gonzi, A. (1994). *Assessment Technical Manual* Australian Government Publishing Service: Canberra.
- Toop, L., Gibb, J. and Worsnop, P. (1994). *Assessment System Design* Australian Government Publishing Service: Canberra.

7.3 Assessor training

- Assessor and Workplace Training National Training Package (1998)
- *Guidelines for Training Package Development* (1997). Australian National Training Authority
- *Standards Best Practice Manual*. (1997). Australian National Training Authority, ACTRAC Products Ltd.

7.4 Conducting assessments

- Foyster, J. (1990) *Getting to Grips with Competency-based Training and Assessment*. TAFE National Centre for Research and Development Ltd: Adelaide.
- Hager, P. (1993) *Principles of Competency-Based Assessment.* In *Testing Times* conference papers. National Centre for Vocational Education Research Ltd: Leabrook, South Australia.
- *Competency Standards for Assessment* (1995). Australian National Training Authority.
- Rumsey, D. (1994) *Assessment Practical Guide* Australian Government Publishing Service: Canberra.
- *Guidelines for Training Package Development* (1997). Australian National Training Authority
- NSW Department of Training and Education Co-ordination and Commonwealth Department of Employment, Education, Training and Youth Affairs (1996). *Teaching and Learning Key Competencies*. A resource kit.

7.5 Evidence gathering methods

- *Competency Standards for Assessment* (1995). Australian National Training Authority.
- *Guidelines for Training Package Development* (1997). Australian National Training Authority.
- NSW Department of Training and Education Co-ordination and Commonwealth Department of Employment, Education, Training and Youth Affairs (1996). *Teaching and Learning Key Competencies*. A resource kit.

7.6 Assessment system design and management

- *Competency Standards for Assessment* (1995). Australian National Training Authority.
- *Guidelines for Training Package Development* (1997). Australian National Training Authority.
- National Guidelines for Integrating Occupational Health and Safety Competencies International Industry Competency Standards (1994, revised 1998).
- National Occupational Health and Safety Certification Standards for Users and Operators of Industrial Equipment (1992, revised 1995).
- National Guidelines for Occupational Health and Safety Competency Standards for the Operation of Load-Shifting Equipment and Other Types of Specified Equipment (1992).

TRAINING STANDARDS

Part C

QUALIFICATIONS

Part C - Qualifications

Introduction

1.0 General

The purpose of this Part is to describe what Electrotechnology Industry Qualifications are, how they are structured and the constraints to be understood and observed by those wishing to use the Qualifications' System.

The National Electrotechnology Industry Qualifications Framework was developed to achieve to the following principles:

- qualifications to be competency based and be made up by clustering or grouping individual Units of Competency.
- qualifications be relevant, in terms of both level and scope, to the realistic needs of the industry and to facilitate real career pathways. Qualification structures are not intended to be misused for other purposes.
- qualifications reflect work requirement and not be influenced by the variety of existing qualifications which may have been used in the past for career progression.
- qualifications be constructed so as to enhance the prospects for consistency, transferability and portability within and across industries.

2.0 Outline of Part C – Qualifications

Information in this Part (C) outlines how the qualifications are structured, along with their composition and content. Completion and issuance requirements including customisation is included along with entry, exit and articulation arrangements. The titles and numbering system of the qualifications along with their descriptions is also included.

3.0 National qualifications

The National Electrotechnology Industry Qualifications are detailed herein and are summarised as follows utilising the Australia Qualifications Framework (AQF) nomenclature.

Note: The qualifications shown in *italics* have been identified for further development.

Certificate	Australian Qualification Framework Title	Qual No.
I	Electrotechnology	UTE 1 01 02
I	Sustainable Energy (Electrotechnology)	UTE 1 02 02
II	Electrotechnology Business Support	UTE 2 01 99
II	Electrotechnology Data Communications	UTE 2 02 99
II	Electrotechnology Powerline (Vegetation Control)	UTE 2 03 99
II	Electrotechnology Remote Area Essential Operations	UTE 2 04 99
II	Electrotechnology Servicing	UTE 2 05 04
II	Electrotechnology Technical Support	UTE 2 06 04
II	Electrotechnology Fire Alarm Servicing	UTE 2 07 06
III	Electrotechnology Assembly and Servicing	UTE 3 01 04
III	Electrotechnology Building Services	UTE 3 02 99
III	Electrotechnology Business Administration	UTE 3 03 99
III	Electrotechnology Communications	UTE 3 04 02
III	Electrotechnology Computer Systems	UTE 3 05 99
III	Electrotechnology Data Communications	UTE 3 06 99
III	Electrotechnology Entertainment and Servicing	UTE 3 07 02
III	Electrotechnology Instrumentation	UTE 3 08 99
III	Electrotechnology Refrigeration and Air Conditioning	UTE 3 09 99
III	Electrotechnology Scanning	UTE 3 10 99
III	Electrotechnology Systems Electrician	UTE 3 11 99
III	Electrotechnology Fire Protection Control	UTE 3 12 06
IV	Electrotechnology Apparatus Servicing	UTE 4 01 99
IV	*Electrotechnology Building Services*	UTE 4 02 99
IV	Electrotechnology Communications	UTE 4 03 02
IV	Electrotechnology Computer Systems	UTE 4 04 99
IV	Electrotechnology Contracting	UTE 4 05 99
IV	Electrotechnology Entertainment and Servicing	UTE 4 06 02
IV	Electrotechnology Explosion-protection	UTE 4 07 99
IV	*Electrotechnology Inspection and Audits*	UTE 4 08 99
IV	Electrotechnology Instrumentation	UTE 4 09 99
IV	Electrotechnology Radar Systems	UTE 4 10 99
IV	Electrotechnology Refrigeration and Air	UTE 4 11 99

Certificate	Australian Qualification Framework Title	Qual No.
	Conditioning	
IV	Electrotechnology Systems Electrician	UTE 4 12 02
IV	Electrotechnology Renewable Energy	UTE 4 13 01
IV	Electrotechnology Fire Protection Control	UTE 4 14 06
Diploma	Computer Systems Engineering	UTE 5 01 99
Diploma	Electrical Engineering	UTE 5 02 99
Diploma	Electronic Engineering	UTE 5 03 99
Diploma	Instrumentation and Control Engineering	UTE 5 04 99
Diploma	Refrigeration and Air Conditioning Engineering	UTE 5 05 99
Diploma	Electrotechnology Renewable Energy	UTE 5 06 01
Adv Diploma	Computer Systems Engineering	UTE 6 01 99
Adv Diploma	Electrical Engineering	UTE 6 02 99
Adv Diploma	Electronic Engineering	UTE 6 03 99
Adv Diploma	Instrumentation and Control Engineering	UTE 6 04 99

4.0 Key features of the qualifications structure

The industry qualifications framework has been developed to satisfy the requirements for flexibility, quality and consistency whilst achieving valid alignment with the Australian Qualifications Framework (AQF). To achieve this, the design processes have had to:

- permit flexibility by maximising the range of options available within the structures.
- satisfy quality requirements by ensuring that the integrity of the AQF, in terms of relative competency levels.
- achieve consistency by ensuring the value of the Units of Competency and the total value of qualifications were realistic reflections of their actual worth.

These designs resulted in the identification of rules and definitions which are explained in the following paragraphs and sections.

5.0 Composition of qualifications

For employment based contracted training, the composition of the relevant qualification needs to be determined in accordance with the completion requirements detailed herein and be subsequently agreed to between the respective parties.

General principles regarding the composition of qualifications are as follows:

- Units of Competency making up a qualification must be appropriate to the work being performed or to be performed by the person seeking the qualification.
- Units of Competency making up a qualification must be appropriate to the level and integrity of the qualification sought.
- unless specifically stated otherwise, the major component of the Units of Competency making up a qualification should be Core Units.
- enterprise developed and/or customised units may be included as part of a qualification when based on the provision outlined in section 7 below.

The terms and conditions for employment based contracted training are likely to require a training agreement, which will generally be provided by State or Territory Training Authorities. Such an agreement may be generally termed a Training Agreement or Contract of Training, which requires parties to the agreement to select the appropriate qualification, units of competency and training plan/program. Additionally the responsibilities of the parties to the agreement will be contained therein.

As information as to what may be required by recognition authorities an model training agreement, for advice only, has been developed and forms part of part D – non-endorsed components. It may be included in an attachment to this section or as a separate publication, as an example of what may be required by such authorities.

6.0 Structuring of qualifications

Qualifications are constructed by the clustering of Units of Competency into Core and Elective groups with Specialisations that may be supported by a further Optional Unit.

Core Units Core Units are compulsory units within the overall group that make up the structure of the qualification.
Specialisations are directly related to the core units, where applicable. Specialisations describe the work environment in which the core technical requirements of learning are to apply.

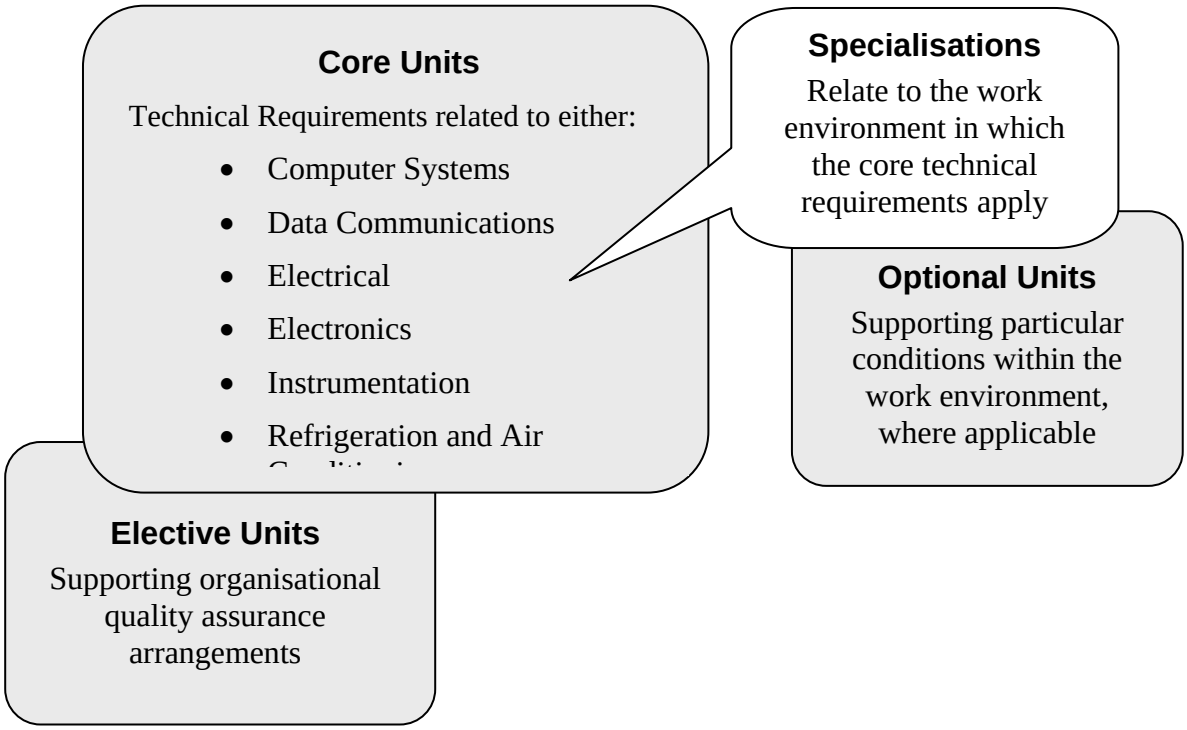
Optional Units Optional Units support particular conditions that may apply to a Specialisation or qualification, where applicable.

Elective Units Elective Units are generally those units that provide flexibility related to particular enterprise quality assurance arrangements including administrative matters related to work outcomes. They may be categorised as general and/or technical.

It should be noted that each Qualification stands alone from the other related Qualifications and should be treated as such when determining the group of Units relative to the Qualifications.

The general structure of the qualifications is shown in the following diagram:

General Structure of the Electrotechnology Qualifications



7.0 Flexibility and customisation

7.1 Flexibility

The approach adopted in the National Electrotechnology Industry Qualifications Framework is aimed at providing the maximum flexibility for all parties using the qualifications.

Qualifications have been structured to meet the needs of all employers and their employees. The qualifications contain a broad range of electives, specialisations and options sufficiently broad to reflect, and respond to, diverse approaches to work requirements.

7.2 Customisation

Customisation can be dealt with in the following contexts:

- where an existing qualification has been constructed in a manner that **supports a regulatory outcome there is to be no customisation** of the units or the qualification.
- individual Units of Competency provide sufficient scope and breadth for enterprise operational procedures and work orders to apply. Provided however that the procedures and orders are not contrary to the regulatory requirement of the State and Territory Authorities.
- industry or enterprise developed Units of Competency units may be imported and added to the elective group of unit(s) within the Industry Qualification Framework, provided the additional unit is relevant and complementary to the Core Units of Competency and its inclusion does not change the intended outcome of the overall qualification and that they have been reviewed and endorsed by the National Electrotechnology Competency Advisory Council (NECAC) for inclusion in the package. Imported units are:
- those from other industries which have been nationally endorsed by the National Training Framework Committee (NTFC) and which have no pre-existing mapping arrangements with the Electrotechnology Industry
- those developed at the enterprise level who wish to have the Unit(s) recognised and include as part of the Electrotechnology Industry Competency Standards set of the National Electrotechnology Training Package

Imported units are to be AQF aligned against the same criteria as applied to the Electrotechnology Industry Competency Standards. They are not to simply attract their current AQF level as this may be quite different to the Electrotechnology Industry value set.

The inclusion and alignment of imported units is to be referred to and carried out by National Utilities and Electrotechnology ITAB – detailed in the Preface of this National Training Package, if the outcomes are to have official status. This action will be co-ordinated by National Utilities and Electrotechnology ITAB, and subsequently submitted for endorsement to the National Training Framework Committee (NTFC) in accordance with its processes. Such changes will be coordinated as detailed in section 10. Maintenance of Qualifications.

Additionally, customisation can provide for the following:

- There are single Units of Competency within Part A- Competency Standards of this National Training Package that can be considered for inclusion with other industry developed NTFC endorsed Units of Competency to form a 'customised qualification'. However, many of the single Units of Competency in the Electrotechnology Industry National Training Package are inappropriate for inclusion without other related units because of safety, regulatory and risk related occupational issues.
- Addendums can be made to evidence guides of those units that form part of the elective group (see section Part C - Qualifications - 7.2 Customisation, dot point two). This allows for customisation of units relative to a qualification outcome in cases where additional knowledge is required for performing a given workplace activity. Addendums shall not replace evidence requirements within units and will not be used as a barrier or impediment for completion of the qualification. Assessment of the additional knowledge shall be dealt with as a separate process to the assessment for competence in the unit.
- Section 12 of Part C – Qualifications, provides additional information and options in relation to achieving contextualisation within the structure of the qualification chosen.

In all cases consultation with National Utilities and Electrotechnology ITAB and other relevant authorities is strongly recommended and is to be dealt with, and in accordance with, all sections of this National Training Package.

8.0 Regulatory arrangements

Licensing authorities will use a range of Qualifications contained within this National Training Package. In construction of such Qualifications EE-Oz Training Standards and Regulators have given consideration to the link between the issuance of the qualification and the respective licence. It is expected that assessment, which meets the competency outcomes of the qualification, will therefore meet the regulatory requirements.

However, licensing authorities have advised that the quality of Registered Training Organisations issuing a qualification for regulatory purposes will be monitored. Where deficiencies are identified, Regulators may deem it necessary to introduce an additional 'external' assessment following the issuance of the qualification to satisfy the issuance of the licence.

9.0 Issuance of qualifications and competency recognition

9.1 General

Formal recognition of competency achievement may be in the form of:

- a full qualification in accordance with the criteria established under the Electrotechnology Industry Qualifications Framework (in Enclosure 1).
- a statement which recognises the attainment of an individual Unit(s) of Competency.

Formal recognition of both types is to be issued by a Registered Training Organisation. The recognition is to be recorded on formats, which have been agreed by National Utilities and Electrotechnology ITAB or its nominated representatives. Formal recognition is to include:

- the name of the recipient.
- the title of the Qualification or Statement of Attainment.
- the title and logo of the Registered Training Organisation.
- the logos of the relevant State/Territory Training and Recognition Authorities, the Nationally Recognised Training (ANTA) logo and, preferably, the logo of National Utilities and Electrotechnology ITAB.
- an attached transcript of information that is meaningful for maximum recognition and skills transfer. The preferred recording method would be the individual Unit of Competency titles and any endorsement or *specialisation* thereof, as well as detailed statements about the achievement of knowledge and skills. Where Nationally and Industry endorsed training materials e.g. modules, programs and/or other exist and these are used to provide the underpinning knowledge and skills identified in the Units of Competency, then the relevant titles of the subjects within the training programs as above, should form part of the transcript attached to the qualification.

9.2 Qualification completion requirements

The requirements for individuals to complete each qualification are outlined in Enclosure 1, Part C – National Electrotechnology Industry Qualification Framework. These documents describe the minimum requirement for the issuance of the qualification. Individuals may undertake additional Elective Units, Specialisations and/or Optional Units concurrent with or after the completion of the qualification.

Typically, the trigger for a qualification contained in the National Electrotechnology Industry Qualifications Framework requires selection and completion of specified Elective Units, one specialisation with a further option to select an Optional Unit within the specialisation or where no specialisation is available, optional units may be selected to contextualise the qualification and the completion of all Core Units of Competency. RTO's are to confirm in accordance with the approved training plan that all the critical aspects of evidence are present on completion of the respective Units of Competency

making up the qualification.

It should be noted that Units or Specialisations taken in addition to the minimum requirements of the qualification are not to be included within the qualification completion requirements but is to be appended thereto.

9.3 Categories

Categories are included in those individual Units of Competency that apply across a range of outcomes and which are to be reported on. The use of *categories* provides a means of defining the specific outcome of the unit.

Additional information about *categories* is contained within each of the relevant units.

9.4 Specialisation

To maximise flexibility, *Specialisations* have been included in the National Electrotechnology Industry Qualifications Framework, where applicable to reflect the work environment, or context in which the core technical knowledge and skills are applied. In issuing the Qualification there will also be a requirement for the feature of the *Specialisation* to be reported. This can be the *Specialisation* or the details described within each *Specialisation* of the relevant unit of competency. Typically, this will be included in records and on reports and/or transcripts attached to the Testamur.

10.0 Maintenance of qualifications

The National Electrotechnology Industry Qualifications were developed by and are therefore owned by the industry. However, it is acknowledged that copyright ownership with respect to this material rests with the Commonwealth.

The Qualifications must be maintained so that they reflect the ongoing needs of the Industry and respond in a timely manner to changed technologies and circumstances.

The Parties who constitute the Electrotechnology Sector of the National Utilities and Electrotechnology ITAB share responsibility for the maintenance of Part C - Qualifications:

- qualifications maintenance will be co-ordinated and managed by National Utilities and Electrotechnology ITAB.
- suggestions and proposals for changes from all parties are welcome. These should be documented and submitted to National Utilities and Electrotechnology ITAB in accordance with its policies and procedures.

11.0 Qualification pathways and articulation

11.1 Pathways

The qualifications within this National Training Package can be achieved through three identified pathways of which new apprenticeships represent but one. A new apprenticeship pathway is open into all the qualification levels provided however, that the requisite articulation or equivalence of entry requirements is evident, as outlined in section 11.2 - Articulation. The possible pathways are:

- Entry level contracted employment, as a new apprenticeship.
- Employee, of an enterprise within the Electrotechnology Industry, wishing to upgrade to a new Qualification (including individuals who are trained outside Australia).
- Individuals from allied occupation wishing to multi-skill by seeking to obtain an Electrotechnology Industry Qualification (including individuals who are trained outside Australia).
- An institutional based pathway.

In general these pathways will include a combination of on and off job training leading to the achievement and demonstration of competence. That is, the pathways identify how competence is developed and how evidence is gathered for the assessment of competence.

Industry acknowledges that competence may be developed entirely in an institutional setting or entirely on the job. However the combination of Units of competency which will result for instance, in an AQF3 outcome will require training and practice for new entrants to achieve competence. Nominal hours may be ascribed to the training program that leads to competence being attributed for the purposes of State and Territory Training Authority requirements and for a reference point for industry. It may be the case that some reduction in this time could be achieved through an institutional setting or due to reducing any peripheral activity that naturally occurs in an actual workplace. This will largely be dependant on costs, work allocation and availability of work suitable to the competencies related to the training program and finally the quality assurance mechanisms of the Registered Training Organisation for analysing, assessing and attributing competence. A combination of on-and-off the job pathway is considered by industry to clearly be more cost effective than an institutional only pathway or all on the job approach where developing competency is underpinned by a rich knowledge and application base. However, all pathways are recognised as possible and are only limited by costs. It should be noted that the final decision to attribute competence rests with the Registered Training Organisation.

The decision as to where the training is provided and the evidence is gathered, is a matter for the Registered Training Organisation. The Registered Training Organisation would be expected to carry out such activity in accordance with the criteria established by the relevant State or Territory Recognition/Training Authority and as outlined in the respective parts A, B and C of this National

Training Package. It should be noted that the Electrotechnology Industry's preferred training model is an on and off-the-job approach to developing competence in the industry.

The industry is of the view that what is critical is that all evidence must be present so that best practice in assessment and the judgement process about attributing competence is valid and reliable.

11.2 Articulation

Qualification articulation and entry and exit arrangements are based on the specific training and education requirements endorsed by the industry.

The construction of the units of competency and the unit groups that make up the individual qualifications are of particular significance to the operational, regulatory and safety arrangements of the industry.

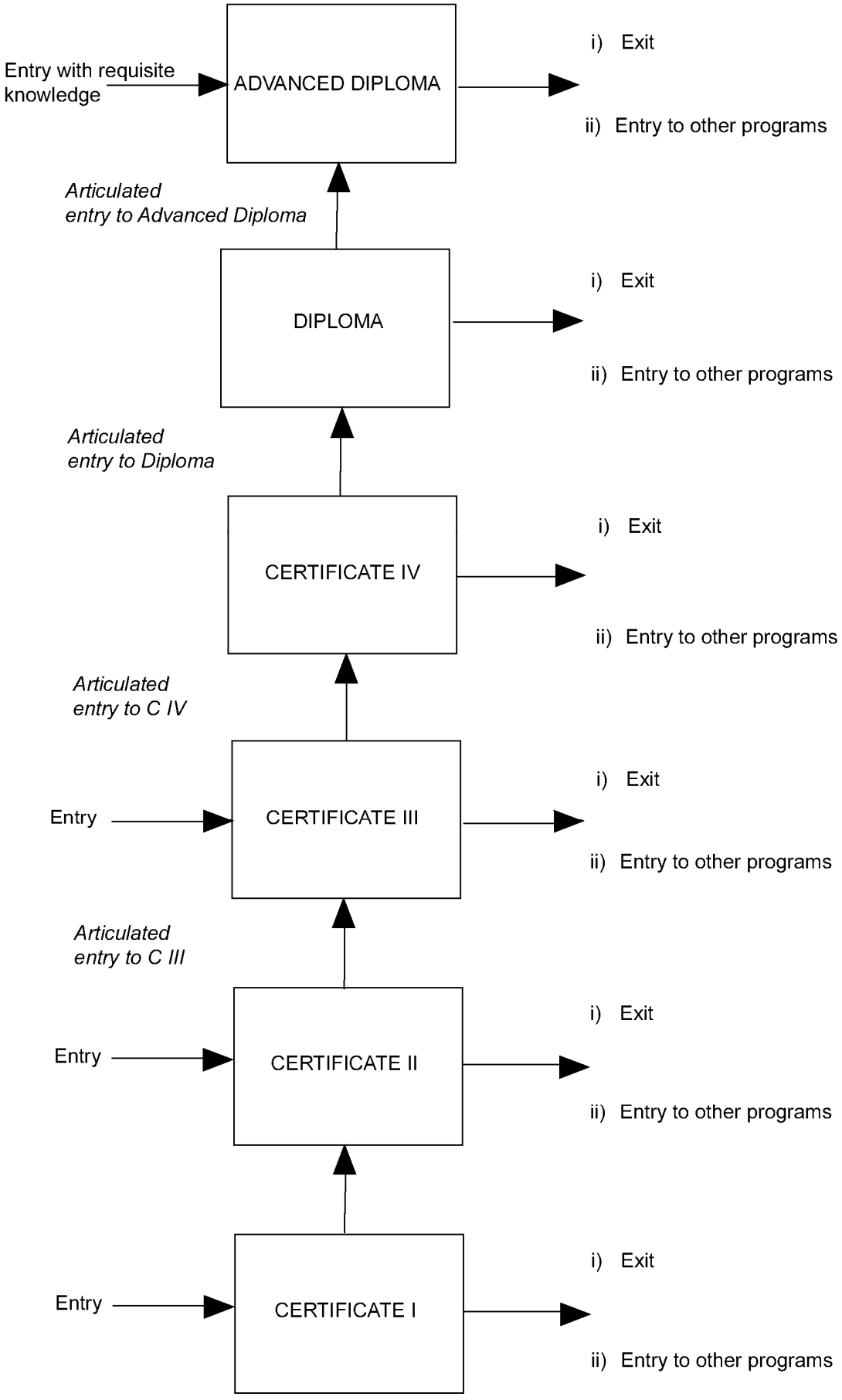
Each qualification provides a unique vocational outcome for new apprentices as entry level employees. Open entry is provided into CI, CII and CIII qualifications, subject to State/Territory statutory requirements, prescriptions within industrial awards and/or policy of training authorities and Registered Training Organisations. Open entry is available at these three levels provided the prospective learner's general education level is equivalent to the outcome of four years of secondary school. Additionally, entry levels at CI, CII and CIII provide an option for potential learners to choose a qualification suited to their needs while providing flexibility for recruitment action by employers. Entry into all qualifications is also available through Recognised Prior Learning (RPL) arrangements.

Articulated entry into the CIV programs is via the CIII programs, entry into the Diploma programs via the CIV programs and entry into the Advanced Diploma programs is via the Diploma programs or via an approved requisite bridging program. Articulated entry to the CIV, Diploma and Advanced Diploma is required due to the technical nature of the units of competency that form the preceding qualification structure. It should be noted that attainment of the relevant units of competency in the, preceding qualifications provide entry rather than the awarding of the qualifications. However, industry recognises that alternative pathways can be developed. If this were the case industry would expect that a requisite entry-bridging program could be developed by an RTO. RTOs may submit these programs to EE-Oz Training Standards for endorsement.

Qualifications exit is at all levels and New Apprenticeship arrangements apply to all.

Articulation arrangements with entry and exit arrangements are shown diagrammatically on the next page.

Electrotechnology Industry - Qualification Articulation



12.0 National electrotechnology industry qualifications framework – Enclosure 1

12.1 Summary of titles with specialisations

Notes: The qualifications shown in *italics* have been identified for further development.

Qualification code numbers are based on the requirements established by ANTA.

The numbers assigned to specialisations are not an ANTA requirement. They have been included for statistical reporting purposes and at the request of RTOs. The numbering has been included as advice only for the purposes of developing consistency for those reporting such.

Certificate I Qualifications

Certificate I in Electrotechnology UTE 1 01 02

- Engineering 101
- Renewable Energy 102

Certificate I in Sustainable Energy (Electrotechnology) UTE 1 02 02

Certificate II Qualifications

Certificate II in Electrotechnology Business Support UTE 2 01 99

- Administration 201
- Wholesaling 202

Certificate II in Electrotechnology Data Communications UTE 2 02 99

Certificate II in Electrotechnology Powerline (Vegetation Control) UTE 2 03 99

- Inspection and Works Negotiation 203
- Climbing 204
- Above Ground Cutting 205
- Ground Based Cutting 206
- Ground Support 207

Certificate II in Electrotechnology Remote Area Essential Services Operations UTE 2 04 99

- Combined Utilities 208
- Power 209
- Water 210

Certificate II in Electrotechnology Servicing UTE 2 05 04

- Antennae 211
- Appliances – Electrical 212
- Appliances – Refrigeration 213
- Automotive Accessories 214
- Business Equipment 215
- Coil Winding 216
- Component/Equipment Assembly 217
- Computer Assembly 218
- Security Systems 219
- Renewable Energy 222
- Fire Alarms 223

Certificate II in Electrotechnology Technical Support UTE 2 06 04

- Illuminated Signs 220
- Operational Support 221

Certificate II Electrotechnology Fire Alarm Servicing UTE 2 07 06

Certificate III Qualifications

Certificate III in Electrotechnology Assembly and Servicing UTE 3 01 04

- Appliances 301
- Machines 302
- Maritime Maintenance 303
- Switchgear 304

Certificate III in Electrotechnology Building Services UTE 3 02 99

- Fire Systems 305
- Security Systems 306

Certificate III in Electrotechnology Business Administration UTE 3 03 99

Certificate III in Electrotechnology Communications UTE 3 04 02

- Broadcast 307
- Microwave 308
- Satellite 309

Certificate III in Electrotechnology Computer Systems UTE 3 05 99

- Business Equipment 310
- Control 311
- Data Capture 312

- Signalling (Rail) 351

Certificate III in Fire Protection Control UTE 3 12 06

Certificate IV Qualifications

Certificate IV in Electrotechnology Apparatus Servicing UTE 4 01 99

- AC Machines 401
- AC/DC Machines 402

Certificate IV in Electrotechnology Building Services UTE 4 02 99

Certificate IV in Electrotechnology Communications UTE 4 03 02

- Broadcast 403
- Broadcast Station Operations 404
- Microwave 405
- Satellite 406

Certificate IV in Electrotechnology Computer Systems UTE 4 04 99

- Control 407
- Networks 408

Certificate IV in Electrotechnology Contracting UTE 4 05 99

- Administration 409
- Technical 410

Certificate IV in Electrotechnology Entertainment and Servicing UTE 4 06 02

- Audio Systems 411
- Television 412
- Video Cassette Recorder 413

Certificate IV in Electrotechnology Explosion-protection UTE 4 07 06

- Equipment 414
- Installation and Inspection 415

Certificate IV in Electrotechnology Inspection and Audits UTE 4 08 99

- Communications 416
- Electrical 417
- Electrical Equipment in Hazardous Areas 418
- Energy Supply 419
- Fire Protection 420
- Lifts 421
- Security 422

Certificate IV in Electrotechnology Instrumentation UTE 4 09 99

- Control 423
- Measurement 424

Certificate IV in Electrotechnology Radar Systems UTE 4 10 99

Certificate IV in Electrotechnology Refrigeration and Air Conditioning UTE 4 11 99

- Control Systems 425
- Heating Ventilation and Air Conditioning Systems 426
- Refrigeration Systems 427

Certificate IV in Electrotechnology Systems Electrician UTE 4 12 02

- Control 428
- Energy Supply 429
- Hazardous Areas 430
- Installation and Servicing 431
- Mining 432
- Process 433

Certificate IV in Electrotechnology Renewable Energy UTE 4 13 01

- Fuel Cells 434
- Micro-hydro Systems 435
- Wind Energy Systems 436

Certificate IV in Electrotechnology Fire Protection Control UTE 4 14 06

Diploma Qualifications

Diploma in Computer Systems Engineering UTE 5 01 99

Diploma in Electrical Engineering UTE 5 02 99

- Control Systems 501
- Drive Systems 502
- Hazardous Areas 503
- Power Systems 504
- Renewable Energy 505

Diploma in Electronic Engineering UTE 5 03 99

- Analogue and Digital 506
- Communications 507
- Medical Equipment 508

Diploma in Instrumentation and Control Engineering UTE 5 04 99

Diploma in Refrigeration and Air Conditioning Engineering UTE 5 05 99

- Control Systems 509
- Heating Ventilation and Air Conditioning Systems 510
- Refrigeration Systems 511

Diploma in Electrotechnology Renewable Energy UTE 5 06 01

- Energy Management Systems 512
- Grid Connected Supplies 513
- Energy Efficient Building Design 514

Advanced Diploma Qualifications

Advanced Diploma in Computer Systems Engineering UTE 6 01 99

Advanced Diploma in Electrical Engineering UTE 6 02 99

Advanced Diploma in Electronic Engineering UTE 6 03 99

- Analogue and Digital 601
- Communications 602
- Medical Equipment 603

Advanced Diploma in Instrumentation and Control Engineering UTE 6 04 99

12.2 Qualifications and specialisation descriptions

The following information has been included to provide users with a broad description of each Qualification and its application, thereby giving additional meaning to the group of units making up that qualification.

Certificate I Qualification

Qualification title: CI in Electrotechnology UTE 1 01 02

Description of the qualification:

Successfully gaining the Certificate I in Electrotechnology qualification with a selected specialisation in engineering or renewable energy demonstrates that the recipient can work to a standard required in the workplace.

Description of the specialisation within the qualification:

Specialisation	Typical work function	Typical work environment
Engineering	Perform basic work activities, including identifying and using a range of components, accessories, materials, tools, equipment, and technologies in the carrying out of work.	Domestic, industrial and commercial premises.
Renewable energy		

Certificate I Qualification

Qualification title: CI in Sustainable Energy (Electrotechnology) UTE 1 02 02

Description of the qualification:

Successfully gaining the Certificate I in Sustainable Energy (Electrotechnology) qualification demonstrates that the recipient can work to a standard required in the workplace with the ability to work consciously and efficiently to minimise the use of energy directly in the course of their work. At the same time material usage and wastage will be minimised and materials recycled where appropriate.

Typical work function	Typical work environment
Perform basic work activities, including identifying and using a range of components, accessories, materials, tools, equipment, and technologies in the carrying out of work.	Domestic, commercial and industrial premises including environments that require sustainable energy outcomes.

Certificate II Qualification

Qualification title: CII in Electrotechnology Business Support UTE 2 01 99

Description of the qualification:

Those gaining this qualification will be able to carry out clerical and administrative support functions to contractors in the electrotechnology industries or in the case of wholesaling be able to respond to wholesaling-general or wholesaling-warehouse or wholesaling-point of sale enquiries and orders.

Description of the specialisation within the qualification:

Specialisation	Typical work function	Typical work environment
Administration - General	Clerical and administrative assistance in contracting office including record maintenance, quotation presentation, promotion of work and products, attending to customer enquiries, preparation of invoices, service reports and material orders.	Domestic, commercial or industrial offices.
Wholesaling - for wholesaling-general or wholesaling-warehouse or wholesaling-point of sale	Identifications of components, sales, ordering, invoicing, receipting of components, devices, accessories and equipment used in the area of electrotechnology including handling customer enquiries.	Commercial premises, covering wholesaling-general or wholesaling-warehouse or wholesaling-point of sale.

Certificate II Qualification

Qualification title: CII in Electrotechnology Data Communications UTE 2 02 99

Description of the qualification:

Those gaining this qualification will be able to install communication cables.

Typical work function	Typical work environment
Installation of non-structured copper communication cabling systems for telephones, security, fire alarms and field bus control. Will be able to install communication cabling (non-structured) in buildings, structures and premises.	Domestic, commercial and industrial premises.

Certificate II Qualification

Qualification title: CII in Electrotechnology Powerline (Vegetation Control) UTE 2 03 99

Description of the qualification:

Those gaining this qualification will be proficient in equipment use, skills and knowledge associated with powerline vegetation control

Description of the specialisation within the qualification:

Specialisation	Typical work function	Typical work environment
Inspection and Works Negotiation	Identifications of broad environmental values of sites, potential hazards, consultation and notification processes associated with sites and categorisation of sites as per legislative and regulatory codes.	Urban and rural worksites.
Climbing	Assessment of trees for defects and hazards prior to climbing, preparation of climbing equipment and understand aerial emergency rescue procedures.	Urban and rural worksites.
Above Ground Cutting	Working from an elevated platform: determine trees natural lean, remove obstructions within the fall zone, determine felling methods, access trees to install restraints, remove trees in a safe manner and clear debris from felling site.	Urban and rural worksites.

Certificate II Qualification

Qualification title: CII in Electrotechnology Powerline (Vegetation Control) - continued UTE 2 03 99

Description of the specialisation within the qualification:

Specialisation	Typical work function	Typical work environment
Ground Based Cutting	Working from the ground only: determine trees natural lean, remove obstructions within the fall zone, determine felling methods, access trees to install restraints, remove trees in a safe manner and clear debris from felling site.	Urban and rural worksites.
Ground Support	Prepare and maintain equipment, operate equipment (e.g. EWP, woodchipper), remove stumps, control traffic.	Urban and rural worksites.

Certificate II Qualification

Qualification title: CII in Electrotechnology Remote Area Essential Services Operations UTE 2 04 99

Description of the qualification:

Those gaining this qualification will be able to perform basic work functions in relation to the operation of portable generation equipment and water supplies servicing remote area communities.

Description of the specialisation within the qualification:

Specialisation	Typical work function	Typical work environment
Combined Utilities	Monitor, service and maintain portable generation and water supply plant and equipment.	Sheds, compounds and easements.
Power	Monitor, service and maintain portable generation plant and equipment.	Sheds, compounds and easements.
Water	Monitor, service and maintain water supply plant and equipment.	Sheds, compounds and easements.

Certificate II Qualification

Qualification title: CII in Electrotechnology Servicing UTE 2 05 04

Description of the qualification:

Those gaining this qualification will be able to install and carry out basic routine maintenance on either antennas, automotive accessories, office equipment, refrigerator and air conditioning equipment, domestic appliances standard communications equipment or security installations.

Description of the specialisation within the qualification:

Specialisation	Typical work function	Typical work environment
Antennas	Installation and routine servicing of antennas used for commercial and private radio communications and for TV and radio reception.	Domestic, residential and commercial premises.
Appliances – Electrical	Installation and adjustment of electrical appliances, washing machines, dryers, heaters, stoves and other small appliances.	Domestic and light commercial premises, eg. households, offices, kitchens and restaurants.
Appliances – Refrigeration	Service refrigerant components of domestic appliances, following prescribed routines. Includes regulatory requirements for purchasing and handling refrigerants.	Domestic and light commercial premises, eg. households, offices, kitchens and restaurants.
Automotive Accessories	Installation and adjustment of electronic accessories designed for use in automobiles such as radio cassettes, compact disc players, alarms and mobile telephones.	Automotive accessory retailers and repairers, automotive dealers.
Business Equipment	Installation and adjustment of electronic equipment such as photocopiers, computers, printers and facsimile machines.	Commercial and home offices.

Certificate II Qualification

Qualification title: CII in Electrotechnology Servicing UTE 2 05 04 - continued

Description of the specialisation within the qualification:

Specialisation	Typical work function	Typical work environment
Coil Winding	Disassemble and/or rewinding of coils of a variety of electrical machines.	Winding workshops, transformer and coil manufacturers premises including commercial and industrial.
Component/Equipment Assembly	Assembly of electrical/electronic equipment or components including printed circuit boards.	Industrial premises.
Computer Assembly	Assembly of computers using standard computer boards and components.	Commercial premises.
Renewable Energy	Installation and routine servicing of renewable energy equipment.	Commercial and industrial and residential properties.
Security Systems	Installation and routine servicing of electronic equipment used to maintain the security of premises.	Commercial and industrial and residential properties.
Fire Alarms	Installation and routine servicing of fire alarms equipment used to maintain the security of premises.	Commercial and industrial and residential properties.

Certificate II Qualification

Qualification title: CII in Electrotechnology Technical Support UTE 2 06 04

Description of the qualification:

Those gaining this qualification will be able to undertake independent work and support activities in the electrotechnology industry.

Description of the specialisation within the qualification:

Specialisation	Typical work function	Typical work environment
Illuminated Signs	Installation and adjustment of advertising and other types of electrically illuminated signs.	Commercial and industrial premises.
Operational Support	Setting up of equipment, cleaning and preparation of work sites including basic repairs to building structures.	Domestic, commercial and industrial premises.

Certificate II Qualification

Qualification title: CII in Electrotechnology Fire Alarm Servicing UTE 2 07 06

Description of the qualification:

Those gaining this qualification will be able to undertake independent work, work safely and to standards, following oral and written instructions and procedures in securely placing and connecting fire detection system and warning components, and applying customer relation protocols in the Fire Protection sector of the electrotechnology industry.

Description of the specialisation within the qualification:

Specialisation	Typical work function	Typical work environment
Fire Alarm Servicing	Placing and connecting fire detection system and warning components, and applying customer relation protocols, including servicing of fire alarms equipment used to assure fire protection to premises.	Commercial and industrial and residential properties.

Certificate III Qualification

Qualification title: CIII in Electrotechnology Assembly and Servicing UTE 3 01 04

Description of the qualification:

Those gaining this qualification will be able to maintain and repair electrical appliances, components and machines within a variety of industrial, commercial and domestic contexts.

Description of the specialisation within the qualification:

Specialisation	Typical work function	Typical work environment
Appliances	Installation maintenance and repair of electrical appliance equipment, washing machines, dryers, heaters, refrigerators, freezers, room air conditioners, stoves and small appliances.	Domestic and light commercial premises eg. households, offices, kitchens and restaurants, and repair workshops.
Machines	The installation, maintenance and repair of electrical machines. Repairs in this context relate to the disassembly, rewinding and reconnection of coils within a variety of electrical machines including direct current and alternating current single and three phase motors, generators and transformers. It also includes modifications to machine Specialisations and the maintenance, modification and repair of associated control equipment.	Winding workshops, transformer and coil manufacturers premises including commercial and industrial.

Certificate III Qualification

Qualification title: CIII in Electrotechnology Assembly and Servicing UTE 3 01 04 - continued

Description of the specialisation within the qualification:

Maritime Maintenance	The maintenance of equipment and apparatus on marine vessels and off-shore drilling platforms.	Ships, submersibles, shipyards, and off-shore platforms.
Switchgear	The maintenance of low and high voltage switchgear, circuit breakers and buswork in substations and large switchboards.	Industrial premises and electricity supply substations.

Certificate III Qualification

Qualification title: CIII in Electrotechnology Building Services UTE 3 02 99

Description of the qualification:

Those gaining this qualification will be able to install, maintain and commission specialised systems in energy monitoring, fire protection or security.

Description of the specialisation within the qualification:

Specialisation	Typical work function	Typical work environment
Fire Systems	Installation, servicing and commissioning the installations incorporating fire sensing devices, alarm and control, and communication circuitry.	Commercial and industrial premises.
Security Systems	Installation, commissioning, maintenance and repair of equipment used maintain the security of commercial and domestic premises.	Commercial and residential premises, security equipment manufacturers and repairers.

Certificate III Qualification

Qualification title: CIII in Electrotechnology Business Administration UTE 3 03 99

Description of the qualification:

Those gaining this qualification will be able to provide administration and wholesaling functions to contractors in the electrotechnology industry.

Description of the specialisation within the qualification:

Specialisation	Typical work function	Typical work environment
Administration	Carry out clerical functions in an electrical contracting office including record maintenance, quotation presentation, promotion of work and products, attend to customer enquiries and complaints, preparation of invoices and service reports and material orders.	Domestic, commercial or industrial offices.

Certificate III Qualification

Qualification title: CIII in Electrotechnology Communications UTE 3 04 02

Description of the qualification:

Those gaining this qualification will be able to install, commission, maintain and carry out maintenance on equipment used for the transmission and reception of voice, image and data signals.

Description of the specialisation within the qualification:

Specialisation	Typical work function	Typical work environment
Broadcast	Installation, commissioning, maintenance and repair of broadcast equipment used for the transmission and reception of TV and radio broadcast signals.	TV and radio stations, emergency service communications systems.
Microwave	Installation, commissioning, maintenance and repair of microwave communications equipment used in terrestrial microwave voice, data and image transmission and reception.	Telecommunications operators, railways, large corporations, emergency services, microwave test facilities.
Satellite	Installation, commissioning, maintenance and repair of satellite communications equipment used in satellite voice, data and image transmission and reception.	Radio telescopes, satellite ground stations and satellite testing facilities.

Certificate III Qualification

Qualification title: CIII in Electrotechnology Computer Systems UTE 3 05 99

Description of the qualification:

Those gaining this qualification will be able to install, commission, maintain and carry out maintenance on computer equipment used in commercial and home office situations.

Description of the specialisation within the qualification:

Specialisation	Typical work function	Typical work environment
Business Equipment	Installation, commissioning, maintenance and repair of computer systems equipment used to facilitate commercial activities.	Commercial, retail and industrial facilities, business equipment manufacturers and repairers.
Control	Installation, configuration maintenance and repair of industrial control computer systems and their peripherals.	Industrial/process situations in all types of industries
Data Capture	Installation, commissioning, maintenance and repair of computer systems equipment used in point-of-sale, inventory control, data logging and remote sensing equipment.	Retail outlets, warehouse and manufacturing facilities, computer systems equipment manufacturers and repairers.
Networks	Installation, commissioning, maintenance and repair of computer systems equipment used to connect and allow communications between computers and peripheral devices.	Commercial, retail and industrial facilities, computer network equipment manufacturers and repairers.

Certificate III Qualification

Qualification title: CIII in Electrotechnology Data Communications UTE 3 06 99

Description of the qualification:

Those gaining this qualification will be able to gain the Base Cabling Licence (BCL) with endorsements.

Description of the specialisation within the qualification:

Specialisation	Typical work function	Typical work environment
Fire Protection	Installation of data cabling using copper, category 5 and/or optical fibre.	Domestic, commercial and industrial premises.
Networks	Installation of data cabling using copper, category 5 and/or optical fibre with underground endorsement and or aerial endorsement.	Domestic, commercial and industrial premises.
Security Systems	Installation of data cabling using copper, category 5 and/or optical fibre.	Domestic, commercial and industrial premises.

Certificate III Qualification

Qualification title: CIII in Electrotechnology Entertainment and Servicing UTE 3 07 02

Description of the qualification:

Those gaining this qualification will be able to install, commission, maintain and carry out maintenance on equipment used for audio and video recording, processing and reproduction.

Description of the specialisation within the qualification:

Specialisation	Typical work function	Typical work environment
Audio – Analogue	Installation, commissioning, maintenance and repair of analogue audio recording, processing, reproduction and amplification equipment used for public and private entertainment.	Recording studios, entertainment facilities, TV and radio station, sporting arenas and equipment repairers.
Audio – Digital	Installation, commissioning, maintenance and repair of digital audio recording, processing, reproduction and amplification equipment used for public and private entertainment.	Recording studios, entertainment facilities, TV and radio station, sporting arenas and equipment repairers.
Electronic Appliances	Installation, commissioning, maintenance and repair of electronic appliances.	Domestic, commercial and industrial environments.
Video	Installation, commissioning, maintenance and repair of video recording, processing and reproduction equipment used for public and private entertainment.	Recording studios, entertainment facilities, TV and radio station, sporting arenas and equipment repairers.

Certificate III Qualification

Qualification title: CIII in Electrotechnology Instrumentation UTE 3 08 99

Description of the qualification:

Those gaining this qualification will be able to undertake work in one or more of the specialisations listed below.

Description of the specialisation within the qualification:

Specialisation	Typical work function	Typical work environment
Control	Maintenance, commissioning, installation and repair of instruments and other control devices.	Workshops and laboratories and where the final product is situated.
Measurement	Maintenance, commissioning, installation and repair of instruments and other measuring devices and associated equipment.	Workshops and laboratories and where the final product is situated.

Certificate III Qualification

Qualification title: CIII in Electrotechnology Refrigeration and Air Conditioning UTE 3 09 99

Description of the qualification:

Those gaining this qualification will be able to install, commission, maintain, fault find and repair refrigeration and air conditioning components, equipment and systems in domestic, commercial and industrial premises.

Description of the specialisation within the qualification:

Specialisation	Typical work function	Typical work environment
Commercial Air Conditioning	Installation, maintenance and repair of commercial comfort air conditioning equipment and systems.	Commercial applications including offices, restaurants, hotels, function centres and shops.
Commercial Refrigeration	Installation, maintenance and repair of commercial refrigeration equipment and systems.	Commercial applications including supermarkets, butchers, delicatessens, cafes and restaurants.
Domestic Appliances	Installation, maintenance and repair of domestic appliances.	Domestic whitegoods appliances including refrigerators, freezers, washing machines, clothes dryers and dishwashers.
Hotel/Club Refrigeration	Installation, maintenance and repair of hotel/club refrigeration equipment and systems.	Hotels and clubs refrigeration systems including beer coolers, post-mix, bottle cabinets, coolrooms and ice makers.
Industrial Refrigeration	Installation, maintenance and repair of industrial refrigeration equipment and systems.	Industrial applications including abattoirs, cold stores, food processing and blast freezers.

Certificate III Qualification

Qualification title: CIII in Electrotechnology Refrigeration and Air Conditioning UTE 3 09 99 - continued

Description of the specialisation within the qualification:

Specialisation	Typical work function	Typical work environment
Transport Refrigeration and Air Conditioning	Installation, maintenance and repair of transport refrigeration and air conditioning equipment and systems.	Transport applications including cars, buses, trucks, ships and planes.
Vending Equipment Refrigeration	Installation, maintenance and repair of vending equipment refrigeration equipment and systems.	Commercial refrigerated drink vending equipment including post-mix, bottle cabinets and coin operated cabinets.

Certificate III Qualification

Qualification title: CIII in Electrotechnology Scanning UTE 3 10 99

Description of the qualification:

Those gaining this qualification will be able to install, commission, maintain and carry out maintenance on equipment using radar and sonar technologies.

Description of the specialisation within the qualification:

Specialisation	Typical work function	Typical work environment
Radar	Installation, commissioning, maintenance and repair of radar equipment used in civil, defence and commercial facilities.	Airports, ports, defence facilities, commercial installations and commercial and private vessels.
Sonar	Installation, commissioning, maintenance and repair of sonar operated devices used in civil, defence and commercial plant, equipment and facilities.	Aircraft maintenance, defence, security and maritime facilities.

Certificate III Qualification

Qualification title: CIII in Electrotechnology Systems Electrician UTE 3 11 99

Description of the qualification:

Those gaining this qualification will be able to install and maintain electrical components, wiring, equipment and systems and may work in specialised areas of the electrical industry.

Description of the specialisation within the qualification:

Specialisation	Typical work function	Typical work environment
Control	Installation, maintenance and repair of industrial control systems and equipment that involve pneumatic; mechanical, electrical/electronic instrumentation systems and equipment.	Industrial and commercial situations in all types of industries.
Energy Supply	The installation and maintenance of apparatus and equipment belonging to electricity distributors ranging from equipment in consumers' switchboards to substations and control centres.	Industrial workshops, substations, switch yards and premises pertaining to the electrical distributors.
Fire Protection	Installation of fire protection alarm wiring in a variety of premises including residential, commercial and industrial settings and the maintenance of fire detection equipment, apparatus and devices contained therein. Options are provided for a teledata specialisation or further specialisation in installation and maintenance.	Residential, commercial and industrial situations.

Certificate III Qualification

Qualification title: CIII in Electrotechnology Systems Electrician UTE 3 11 99 - continued

Description of the specialisation within the qualification:

Specialisation	Typical work function	Typical work environment
Installation and Servicing	General installation of wiring in a variety of premises including residential, commercial and industrial settings and the maintenance of equipment, apparatus and devices contained therein. Options are provided for a teledata specialisation or further specialisation in installation and maintenance.	Residential, commercial and industrial situations.
Maritime Installation	The installation and maintenance of equipment and apparatus on marine vessels and off-shore drilling platforms.	Ships, submersibles, shipyards and off-shore drilling platforms.
Mining	The installation and maintenance of equipment and apparatus in mines and collieries and associated land drilling and mining operations.	Can include open cut and under ground mines and workshops specialising in mining equipment.
Plant Servicing	The installation and maintenance of equipment and apparatus associated with mobile and stationary plant.	Commercial and industrial environments.

Certificate III Qualification

Qualification title: CIII in Electrotechnology Systems Electrician UTE 3 11 99 - continued

Description of the specialisation within the qualification:

Specialisation	Typical work function	Typical work environment
Process	Installation, maintenance and repair of process control systems and equipment that involve pneumatic, hydraulic mechanical and electrical/electronic instrumentation systems and equipment.	Process situations for variety of industries.
Security	Installation, commissioning, maintenance and repair of equipment used to maintain the security of commercial and domestic premises.	Residential, commercial and industrial situations.
Signalling (Rail)	The installation and maintenance of signalling systems used for the control of public transport, especially trains, automobile traffic and the like.	Includes manufacturing workshops, industrial base workshops and equipped motor vehicles.

Certificate III Qualification

Qualification title: CIII in Electrotechnology Fire Fire Protection Control UTE 3 12 06

Description of the qualification:

Those gaining this qualification will be able to install, commission, maintain, and fault find and repair equipment in electrotechnology fire protection systems in the Fire Protection sector of the electrotechnology industry.

Description of the specialisation within the qualification:

Specialisation	Typical work function	Typical work environment
Fire Protection Control	Installation, commissioning, maintenance and repair of electrotechnology fire protection equipment and controls used in fire protection systems to assure protection of commercial, industrial and domestic premises.	Commercial and industrial and residential properties.

Certificate IV Qualification

Qualification title: CIV in Electrotechnology Apparatus Servicing UTE 4 01 99

Description of the qualification:

Those gaining this qualification will be able to maintain and repair electrical machines within a variety of industrial and commercial contexts.

Description of the specialisation within the qualification:

Specialisation	Typical work function	Typical work environment
AC Machines	The installation, maintenance and repair of electrical AC machines. Repairs in this context relate to the disassembly, rewinding and reconnection of coils within a variety of electrical machines including alternating current single and three phase motors, generators and transformers.	Winding workshops, transformer and coil manufacturers' premises including commercial and industrial.
AC/DC Machines	The installation, maintenance and repair of electrical machines. Repairs in this context relate to the disassembly, rewinding and reconnection of coils within a variety of electrical machines including direct current and alternating current single and three phase motors, generators and transformers.	Winding workshops, transformer and coil manufacturers' premises including commercial and industrial.

Certificate IV Qualification

Qualification title: CIV in Electrotechnology Building Services UTE 4 02 99

Description of the qualification:

Those gaining this qualification will be able to

Description of the specialisation within the qualification:

Specialisation	Typical work function	Typical work environment
TBA		
TBA		

Certificate IV Qualification

Qualification title: CIV in Electrotechnology Communications UTE 4 03 02

Description of the qualification:

Those gaining this qualification will be able to install, commission, maintain and carry out repairs on equipment and systems used for the transmission and reception of voice, image and data signals.

Description of the specialisation within the qualification:

Specialisation	Typical work function	Typical work environment
Broadcast	Installation, commissioning, maintenance and repair of broadcast equipment and systems used for the transmission and reception of TV and radio broadcast signals.	TV and radio stations, emergency service communications systems.
Broadcast Station Operations	Operating maintaining equipment used in broadcast operations. Installation, commissioning, maintenance and repair of TV and radio broadcast studio equipment.	TV and radio stations, recording studio and other broadcast systems.
Microwave	Installation, commissioning, maintenance and repair of microwave communications equipment and systems used in terrestrial microwave voice, data and image transmission and reception.	Telecommunications operators, railways, large corporations, emergency services, microwave test facilities.
Satellite	Installation, commissioning, maintenance and repair of satellite communications equipment and systems used in satellite voice, data and image transmission and reception.	Radio telescopes, satellite ground stations and satellite testing facilities.

Certificate IV Qualification

Qualification title: CIV in Electrotechnology Computer Systems UTE 4 04 99

Description of the qualification:

Those gaining this qualification will be able to install, commission, maintain and carry out repairs on computer equipment and systems used in commercial and home office situations.

Description of the specialisation within the qualification:

Specialisation	Typical work function	Typical work environment
Control	Installation, commissioning, maintenance and repair of process control systems and equipment that involve pneumatic, hydraulic, mechanical and electrical/electronic instrumentation systems and equipment but extending to more complex systems and equipment possibly with specialisation in some particular area with a lower level of supervision than Certificate III.	Process situations for a variety of industries.
Networks	Installation, commissioning, maintenance and repair of computer equipment and systems used to connect and allow communications between computers and peripheral devices.	Commercial, retail and industrial facilities, computer network equipment manufacturers and repairers.

Certificate IV Qualification

Qualification title: CIV in Electrotechnology Contracting UTE 4 05 99

Description of the qualification:

Those gaining this qualification will be able to undertake contracting in the electrotechnology industry.

Description of the specialisation within the qualification:

Specialisation	Typical work function	Typical work environment
Administration	Managing a contracting office, including record maintenance, quotation preparation, promotion of work and product, attend to customer enquiries, preparation of business plans, invoices, services reports, maintenance reports and material stock control.	Domestic, commercial or industrial office.
Technical	Carry out estimating, preparation of quotations, tenders related to installation, maintenance, repair and servicing of electrical/electronic apparatus and systems under formal and informal contract arrangements. Manage contracting projects and contracting business operations.	Residential, commercial and industrial environments.

Certificate IV Qualification

Qualification title: CIV in Electrotechnology Entertainment and Servicing UTE 4 06 02

Description of the qualification:

Those gaining this qualification will be able to install, commission, maintain and carry out repairs on equipment and systems used for audio and video recording, processing and reproduction.

Description of the specialisation within the qualification:

Specialisation	Typical work function	Typical work environment
Audio Systems	Installation, commissioning, maintenance and repair of audio recording, processing and reproduction equipment and systems used for public and private entertainment.	Recording studios, entertainment facilities, TV and radio station, sporting arenas, equipment repairers, offices and domestic locations.
Television	Installation, commissioning, maintenance and repair of television recording, processing and reproduction equipment and systems used for public and private entertainment.	Recording studios, entertainment facilities, TV and radio station, sporting arenas, equipment repairers, offices and domestic locations.
Video Cassette Recorder	Installation, commissioning, maintenance and repair of video recording, processing and reproduction equipment and systems used for public and private entertainment.	Recording studios, entertainment facilities, TV and radio station, sporting arenas, equipment repairers, offices and domestic locations.

Certificate IV Qualification

Qualification title: CIV in Electrotechnology Explosion-protection UTE 4 07 06

Description of the qualification:

Those gaining this qualification will be able to overhaul and repair explosion-protected equipment in hazardous locations.

Description of the specialisation within the qualification:

Specialisation	Typical work function	Typical work environment
Equipment	Overhaul and repair of explosion-protected equipment as specified in Australian/New Zealand and other standards. This work requires the measuring and testing of equipment to determine the overhaul/repair required and the documentation of repair work.	Overhaul and repair workshops certified by an authorised body meeting the requirement to carry out this work. Work may involve overhaul and repair work on an industry site.
Installation and Inspection	Installation, maintenance and inspection of electrical installation in a hazardous area. The work includes work with wiring and explosion-protected equipment in a hazardous area and equipment and wiring outside the hazardous area that may influence the explosion-protection.	Industries and environment where hazardous areas have been identified and in which electrical systems exist. Typically, coal mines, petrochemical, plant, refuelling depots, service stations, paint spraying areas, underground car parks, grain handling facilities and the like

Certificate IV Qualification

Qualification title: CIV in Electrotechnology Inspection and Audits UTE 4 08 99

Description of the qualification:

Those gaining this qualification will be able to

Description of the specialisation within the qualification:

Specialisation	Typical work function	Typical work environment
Communications	*TBA*	*TBA*
Electrical	*TBA*	*TBA*
Electrical Equipment in Hazardous Areas	*TBA*	*TBA*
Energy Supply	*TBA*	*TBA*
Fire Protection	*TBA*	*TBA*
Lifts	*TBA*	*TBA*
Security	*TBA*	*TBA*

Certificate IV Qualification

Qualification title: CIV in Electrotechnology Instrumentation UTE 4 09 99

Description of the qualification:

Those gaining this qualification will be able to undertake work in one or more of the specialisations listed below.

Description of the specialisation within the qualification:

Specialisation	Typical work function	Typical work environment
Control	Installation, maintenance, commissioning and repair of process control systems and equipment that involve pneumatic, hydraulic mechanical and electrical/electronic instrumentation systems and equipment but extending to more complex systems and equipment possibly with specialisation in some particular area with a lower level of supervision than Certificate III.	Process situations for a variety of industries and workshops/laboratories.
Measurement	Maintain, commission and repair of instruments and other measuring devices and associated equipment but extending to more complex systems and equipment possibly with specialisation in some particular area with a lower level of supervision than Certificate III.	Workshops and laboratories and where final product is situated.

Certificate IV Qualification

Qualification title: CIV in Electrotechnology Radar Systems UTE 4 10 99

Description of the qualification: Post-trade qualification in Radar Systems

Those gaining this qualification will be able to install, commission, maintain and carry out repairs on equipment and systems using radar technologies.

Typical work function	Typical work environment
Install, commission, maintain and carry out repairs on equipment and systems using radar and sonar technologies.	Commercial, defence, police, aerospace and maritime environments.

Certificate IV Qualification

Qualification title: CIV in Electrotechnology Refrigeration and Air Conditioning UTE 4 11 99

Description of the qualification:

Those gaining this qualification will be able to select, install, commission, maintain and fault find and repair commercial refrigeration/air conditioning components, equipment and systems.

Description of the specialisation within the qualification:

Specialisation	Typical work function	Typical work environment
Control Systems	Select, commission, maintain and repair commercial refrigeration and air conditioning control equipment and systems including electrical, electronic, pneumatic and digital controls.	Commercial applications including offices, restaurants, shops and hotels.
Heating Ventilation and Air Conditioning Systems	Install, commission, maintain and repair commercial air conditioning equipment and systems.	Commercial applications including offices, restaurants, shops and hotels.
Refrigeration Systems	Select, install, commission and repair commercial refrigeration equipment and systems.	Commercial application and equipment including coolrooms and freezerooms.

Certificate IV Qualification

Qualification title: CIV in Electrotechnology Systems Electrician UTE 4 12 02

Description of the qualification:

Those gaining this qualification will be able to perform more advanced functions that at CIII.

Description of the specialisation within the qualification:

Specialisation	Typical work function	Typical work environment
Control	Installation, commissioning, maintenance and repair of industrial control systems and equipment that involve pneumatic, mechanical, electrical/electronic instrumentation systems and equipment but extending to more complex systems and equipment possibly with specialisation in some particular area with a lower level of supervision than Certificate III.	Industrial and commercial situations in all types of industries.
Energy Supply	Installation, commissioning, maintenance and repair of apparatus and equipment belonging.	Industrial workshops, substations, switchyards and premises pertaining to the electrical distributor.
Hazardous Areas	Installation, commissioning, maintenance and repair of hazardous equipment and installations that involve pneumatic, mechanical, electrical/electronic instrumentation systems and equipment.	Industrial and commercial situations in all types of industries where hazardous equipment is required such as underground coal mine, chemical plants and petrochemical plants.

Certificate IV Qualification

Qualification title: CIV in Electrotechnology Systems Electrician UTE 4 12 02 - continued

Description of the specialisation within the qualification:

Specialisation	Typical work function	Typical work environment
Installation and Servicing	Installation, commissioning, maintenance and repair.	Residential, commercial and industrial situations.
Mining	The installation, commissioning, maintenance and repair of equipment and apparatus in mines and collieries and associated land drilling and mining operations.	Can include open cut and under ground mines and workshops specialising in mining equipment.
Process	Installation, maintenance and repair of process control systems and equipment that involve pneumatic, hydraulic, mechanical and electrical/electronic instrumentation systems and equipment but extending to more complex systems and equipment possibly with specialisation in some particular area with a lower level of supervision than Certificate III.	Process situations for variety of industries.

Certificate IV Qualification

Qualification title: CIV in Electrotechnology Renewable Energy UTE 4 13 01

Description of the qualification:

Those gaining this qualification will be able to select, install, commission, maintain and carry out repairs on electrical equipment and systems designed for the generation of renewable energy.

Description of the specialisation within the qualification:

Specialisation	Typical work function	Typical work environment
Fuel Cells	Installation, commissioning, maintenance and repair fuel cells.	Commercial and industrial situations.
Micro-hydro Systems	Installation, commissioning, maintenance and repair micro-hydro systems.	Rural enterprises.
Wind Energy Systems	Installation, commissioning, maintenance and repair of wind energy conversion systems.	Residential, commercial, industrial and rural situations.

Certificate IV Qualification

Qualification title: CIV in Electrotechnology Fire Fire Protection Control UTE 4 14 06

Description of the qualification:

Those gaining this qualification will be able to select, install, commission, maintain, fault find and repair complex equipment and controls used in electrotechnology fire protection systems in the Fire Protection sector of the electrotechnology industry.

Description of the specialisation within the qualification:

Specialisation	Typical work function	Typical work environment
Fire Protection Control	Selection, installation, commissioning, maintenance, and fault find and repair of complex equipment and controls used in electrotechnology fire protection control systems of commercial, industrial and domestic premises.	Commercial and industrial and residential properties.

Diploma Qualification

Qualification title: Diploma in Computer Systems Engineering UTE 5 01 99

Description of the qualification: Technician level qualification in Computer Systems Engineering

Those gaining this qualification will be able to

Typical work function	Typical work environment
Select, install, commission, maintain and diagnose faults on equipment and systems using computers, computer peripherals and networking components.	Commercial, industrial, educational workshop and laboratories environments.

Diploma Qualification

Qualification title: Diploma in Electrical Engineering UTE 5 02 99

Description of the qualification:

Those gaining this qualification will be able to select, install, commission, maintain and carry out repairs on electrical equipment and systems designed for the generation, transmission and distribution of electricity.

Description of the specialisation within the qualification:

Specialisation	Typical work function	Typical work environment
Control Systems	Installation, commissioning, maintenance and repair of industrial control systems and equipment that involve pneumatic, mechanical, electrical/electronic instrumentation systems and equipment but extending to more complex systems and equipment possibly with specialisation in some particular area with a lower level of supervision than Certificate IV.	Industrial and commercial situations in all types of industries.
Drive Systems	Installation, commissioning, maintenance and repair of industrial drive systems and equipment that involve pneumatic, mechanical, electrical/electronic instrumentation systems and equipment but extending to more complex systems and equipment possibly with specialisation in some particular area with a lower level of supervision than Certificate IV.	Industrial and commercial situations in all types of industries.

Diploma Qualification

Qualification title: Diploma in Electrical Engineering UTE 5 02 99 - continued

Description of the specialisation within the qualification:

Specialisation	Typical work function	Typical work environment
Hazardous Areas	Installation, commissioning, maintenance and repair of industrial control systems and equipment that involve pneumatic, mechanical, electrical/electronic instrumentation systems and equipment but extending to more complex systems and equipment possibly with specialisation in some particular area with a lower level of supervision than Certificate IV.	Industrial and commercial situations in all types of industries where hazardous equipment is required such as underground coal mines, chemical plants and petrochemical plants.
Power Systems	Installation, commissioning, maintenance and repair of apparatus and equipment belonging.	Industrial workshops, substations, switchyards and premises pertaining to the electrical distributor.
Renewable Energy	Installation, commissioning, maintenance and repair of renewable energy sources such as solar-voltaic arrays, wind generators and mains conversion equipment.	Domestic, commercial and industrial settings where renewable energy generation equipment is located.

Diploma Qualification

Qualification title: Diploma in Electronic Engineering UTE 5 03 99

Description of the qualification:

Those gaining this qualification will be able to select, install, commission, maintain and carry out repairs on electronic equipment and systems used in manufacturing, entertainment and defence situations.

Description of the specialisation within the qualification:

Specialisation	Typical work function	Typical work environment
Analogue and Digital	Selection, installation, commissioning, maintenance and repair of analogue and digital electronic equipment and the supervision of others.	Commercial, industrial, defence and residential locations.
Communication	Selection, installation, commissioning, maintenance and repair of communication equipment and the supervision of others.	Commercial, industrial, defence and residential locations.
Medical Equipment	Selection, installation, commissioning, maintenance and repair of medical equipment and the supervision of others.	Commercial and medical locations.

Diploma Qualification

Qualification title: Diploma in Instrumentation and Control Engineering UTE 5 04 99

Description of the qualification: Technician level qualification in Instrumentation and Control Engineering

Those gaining this qualification will be able to install, commission, repair and fault diagnose instrumentation and control equipment and systems.

Typical work function	Typical work environment
Install, commission, repair and fault diagnose instrumentation and control equipment and systems.	The typical environment is commercial, industrial, defence and residential locations as well as instrumentation and control laboratories and workshops.

Diploma Qualification

Qualification title: Diploma in Refrigeration and Air Conditioning Engineering UTE 5 05 99

Description of the qualification:

Those gaining this qualification will be able to design, select, install, commission, maintain and fault find and repair refrigeration and/or air conditioning equipment and systems in commercial and industrial applications.

Description of the specialisation within the qualification:

Specialisation	Typical work function	Typical work environment
Control Systems	Design, select, commission and repair commercial refrigeration and air conditioning control equipment and systems, including energy management and building management systems.	Large commercial applications including multi-zone and multi floor air conditioning systems.
Heating Ventilation and Air Conditioning Systems	Design, select, install, commission and repair commercial air conditioning equipment and systems.	Commercial applications including single floor, offices, restaurants, shops and hotels.
Refrigeration Systems	Design, select, commission and repair industrial refrigeration equipment and systems.	Industrial applications including process cooling, blast freezers, fish markets, abattoirs and cold stores.

Diploma Qualification

Qualification title: Diploma in Electrotechnology Renewable Energy UTE 5 06 01

Description of the qualification:

Those gaining this qualification will be able to select, install, commission, maintain and carry out repairs on electrical equipment and systems designed for the generation of renewable energy.

Description of the specialisation within the qualification:

Specialisation	Typical work function	Typical work environment
Energy Management Systems	Installation, commissioning, maintenance and repair of energy management systems and equipment.	Industrial, commercial and residential situations.
Grid Connected Supplies	Installation, commissioning, maintenance and repair of grid connected supplies and associated equipment.	Industrial, commercial and residential situations.
Energy Efficient Building Design	Select, advise and design on useful systems to maximise energy building efficiency.	Industrial, commercial and residential situations.

Advanced Diploma Qualification

Qualification title: Advanced Diploma in Computer Systems Engineering UTE 6 01 99

Description of the qualification:

Those gaining this qualification will be able to design, select, install, commission, maintain and carry out repairs on advanced equipment and systems using computers, computer peripherals and networking components.

Typical work function	Typical work environment
Design, selection, installation, commissioning and repair of computer systems, local and wide area networks and supervision of others.	Commercial, industrial and residential locations.

Advanced Diploma Qualification

Qualification title: Advanced Diploma in Electrical Engineering UTE 6 02 99

Description of the qualification: Paraprofessional qualification in Electrical Engineering

Those gaining this qualification will be able to design, select, install, commission, maintain and carry out repairs on electrical equipment and systems

Typical work function	Typical work environment
Design, select, install, commission, maintain and carry out repairs on advanced electrical equipment and systems designed for the generation, transmission and distribution of electricity.	Commercial, industrial and power distribution and transmission environment.

Advanced Diploma Qualification

Qualification title: Advanced Diploma in Electronic Engineering UTE 6 03 99

Description of the qualification:

Those gaining this qualification will be able to design, select, install, commission, maintain and carry out repairs on advanced electronic equipment and systems used in assembly, entertainment and defence situations.

Description of the specialisation within the qualification:

Specialisation	Typical work function	Typical work environment
Analogue and Digital	Design, selection, installation, commissioning, maintenance and repair of analogue and digital electronic equipment and the supervision of others.	Commercial, industrial, defence and residential locations.
Communication	Design, selection, installation, commissioning, maintenance and repair of communication equipment and the supervision of others.	Commercial, industrial, defence and residential locations.
Medical Equipment	Design, selection, installation, commissioning, maintenance and repair of medical equipment and the supervision of others.	Commercial and medical locations.

Advanced Diploma Qualification

Qualification title: Advanced Diploma in Instrumentation and Control Engineering UTE 6 04 99

Description of the qualification: Paraprofessional qualification in Instrumentation and Control Engineering

Those gaining this qualification will be able to design, commission, repair and fault diagnose instrumentation and control equipment and systems.

Typical work function	Typical work environment
Design, select, install, commission, repair and fault diagnose instrumentation and control equipment and systems and supervise those tasks.	The typical environment is commercial, industrial, defence and residential locations as well as instrumentation and control laboratories and workshops.

12.3 Qualifications structure

Introduction

This statement should be read in conjunction with Part A – Competency Standards, section 9 – Unit Construction. The structure of the qualifications includes the units of competency relevant to the outcome of the particular qualification. In most cases the *category* that relates to a particular unit is shown. Where a unit requires a *category* to be reported that depends on the special workplace environment to which the *category* applies then the *category* is determined after the *specialisatio*n is determined. In these cases a simple coding system applies. Similar codes and reporting arrangements are used for determining the particular conditions that apply to those units that have endorsements.

Accordingly the following provides clarification by example, and should be used in conjunction with respective qualifications:

Where a *category* is required to be reported as part of a unit then a code letter having an alpha character between A to Z identifies this *category*. The categories that apply to any one unit are listed at the beginning of that unit. The *categories* are terms that are included in the glossary.

For example, UTE NES 206B A means that the unit, Maintain and Repair Apparatus and Associated Circuits, needs to be reported in the *category* of *electrical.* On records and reports it will appear as:

UTE NES 206B A: Maintain and Repair Apparatus and Associated Circuits – *electrical*

Where an endorsement is required to be reported as part of a unit then a code letter having an alpha character between Z to A identifies this endorsement. The endorsements that apply to any one unit are listed at the beginning of that unit and are further identified and described in the Range of Variables of that unit. In some instances the terms associated with endorsements also forms part of the glossary.

For example, UTE NES 409U A means that the unit, Inspect Visually Existing Hazardous Area Installations, needs to be reported with the endorsement of *pressurisation (Ex p).* On records and reports it will appear as:

UTE NES 409U A: Inspect Visually Existing Hazardous Area Installations – *pressurisation (Ex p)*

Where a *category* or an endorsement is required to be reported but is not specifically identified with the particular unit listed in the qualification structure, then its identity is determined in the following way. **Reference needs to be made to the particular unit of competency for details.**

For categories:

* identifies the *category* alpha character (A to Z) for the unit number and (qualifier)

** identifies the *category* by reference to the selected *specialisation* within that qualification structure, say *electronic* for the unit title and (qualifier)

For example, a unit in a qualification structure may appear as follows:

UTE NES401* C - Perform Functional Apparatus Checks (**)

On records and reports it will appear as:

UTE NES401C C- Perform Functional Apparatus Checks - *electronic*

For endorsements:

^ identifies the alpha character Z to A for the unit number and (qualifier)

^^ identifies the endorsement on which an item of *apparatus, appliances, components, equipment, plant and machinery,* enclosures and the like that work can be performed on; for the unit title and (qualifier)

For example, a unit in a qualification structure may appear as follows:

UTE NES208^ A – Disconnect and Reconnect Fixed Wired Electrical Equipment Connected to Supplies up to 1000 Volts a.c. or 1500 Volts d.c (^^)

On records and reports it will appear as:

UTE NES208S A – Disconnect and Reconnect Fixed Wired Electrical Equipment Connected to Supplies up to 1000 Volts a.c. or 1500 Volts d.c *(motors)*

The following pages detail the full range of Qualifications and include their respective structure, composition and requirements.

Certificate I in Electrotechnology

National Qualification No	UTE 1 01 02
Qualification Specialisation	'As determined by the specialisation selected below with relevant information included in records and on reports and/or transcripts attached to the testamur'

Must select a *Specialisation*:

❑ ***Engineering***

❑ ***Renewable Energy***

Core Units – All to be completed

UTE NES060 A	Carry out routine work activities in an Electrotech environment
UTE NES050 A	Identify & select components/accessories/materials for Electrotech work activities
UTE NES051 A	Use of routine equipment/plant/technologies in an Electrotech environment

Elective Units – At least two Elective Units must be selected from the list of Group A and Group B Elective Units, of which no less than one must be chosen from Group A.

Group A – General Elective Units

UTE NES052 A	Interact with customers/clients for quality service
UTE NES053 A	Participate in job data records collection of the business

Group B – Technical Elective Units

UTE NES054 A	Produce routine products for carrying out Electrotech work activities
UTE NES055 A	Produce routine tools/devices for carrying out Electrotech work activities
UTE NES056 A	Apply technologies and concepts to Electrotech work activities
UTE NES057 A	Apply computation when using equipment/materials/ concepts in an Electrotech environment
UTE NES058 A	Identify affects of energy on machinery/materials in an Electrotech environment
UTE NES059 A	Identify building techniques, methods and materials used in Electrotech works activities
UTE NES063 A	Contribute to the operation of support plant & equipment used in Electricity Supply

End of this qualification

Sustainable Energy (Electrotechnology) – Certificate I

Qualification No	UTE 1 02 02
Qualification Specialisation	Not applicable

Core Units - All to be completed

UTE NES061 A	Provide basic sustainable energy solutions for energy reduction in domestic premises
UTE NES062 A	Apply sustainable energy practice in daily activities
UTE NES065 A	Promote sustainable energy practice in the community

Elective Units – At least two Elective Units must be selected from the list of Group A and Group B Elective Units, of which no less than one must be chosen from Group A.

Group A – General Elective Units

UTE NES052 A	Interact with customers/clients for quality service
UTE NES053 A	Participate in job data records collection of the business

Group B – Technical Elective Units

UTE NES064 A	Undertake computations in an Electrotechnology environment

End of qualification

Electrotechnology Business Support – Certificate II

National Qualification No	UTE 2 01 99
Qualification Specialisation	'As determined by the specialisation selected below with relevant information included in records and on reports and/or transcripts attached to the testamur'

Core Units - All to be completed

UTE NES014* B	Undertake basic office/warehouse administrative activities (**)
UTE NES015* B	Promote basic organisational services/products (**)

Elective Units - One to be completed

UTE NES005 A	Co-ordinate materials
UTE NES009 A	Participate in the training of others

Specialisation
One to be selected

Administration (to be reported in the category of *administration* - *N - General)
Wholesaling (to be reported in the category of *wholesaling* - *Q – for wholesaling-general or wholesaling-warehouse or wholesaling-point of sale)

End of this qualification

Electrotechnology Data Communications – Certificate II

National Qualification No	UTE 2 02 99
Qualification Specialisation	'As determined by the specialisation selected below with relevant information included in records and on reports and/or transcripts attached to the testamur'

Core Units - All to be completed

UTE NES105G A	Install and terminate wiring systems – *cabling/wiring support and protection*
UTE NES105H A	Install and terminate wiring systems – *network communications*
UTE NES201F B	Perform basic repair to electrical/electronic apparatus – *data communications*
UTE NES202F B	Assemble/disassemble electrical/electronic components – *data communications*
UTE NES401F B	Perform functional apparatus checks – *data communications*

Elective Units - One to be completed

UTE NES002 A	Attend to breakdown
UTE NES003 A	Transport apparatus and materials
UTE NES005 A	Co-ordinate materials

End of this qualification

Electrotechnology Powerline (Vegetation Control) – Certificate II

National Qualification No	UTE 2 03 99
Qualification Specialisation	'As determined by the specialisation selected below with relevant information included in records and on reports and/or transcripts attached to the testamur'

Core Units - All to be completed

UTE NES001B A	Undertake basic work activities - *electrical*
UTE NES004 A	Operate plant, machinery and equipment
UTE NES204 A	Vegetation control

Elective Units - One to be completed

UTE NES003 A	Transport apparatus and materials
UTE NES005 A	Co-ordinate materials

Specialisation
One to be selected

Inspection and Works Negotiation
Climbing
Above Ground Cutting
Ground Based Cutting
Ground Support

End of this qualification

Electrotechnology Remote Area Essential Services Operations – Certificate II

National Qualification No	UTE 2 04 99
Qualification Specialisation	'As determined by the specialisation selected below with relevant information included in records and on reports and/or transcripts attached to the testamur'

Core Units - All to be completed

UTE NES013 A	Monitor a remote area essential services operation
UTE NES216 A	Perform basic servicing to plant/equipment associated with a remote area essential services operation
UTE NES217 A	Maintain environmental conditions of a remote area utilities operation

Elective Units - One to be completed

UTE NES002 A	Attend to breakdown
UTE NES005 A	Co-ordinate materials

Specialisation
One to be selected

Combined Utilities
Power
Water

End of this qualification

Electrotechnology Servicing – Certificate II

National Qualification No	UTE 2 05 04
Qualification Specialisation	'As determined by the specialisation selected below with relevant information included in records and on reports and/or transcripts attached to the testamur'

Core Units - All to be completed

UTE NES201* D	Perform basic repair to electrical/electronic apparatus (**)
UTE NES202* D	Assemble/disassemble electrical/electronic components (**)
UTE NES401* D	Perform functional apparatus checks (**)

Elective Units - One to be completed

UTE NES002 A	Attend to breakdown
UTE NES003 A	Transport apparatus and materials
UTE NES005 A	Co-ordinate materials

Specialisation One to be selected	**Optional Units A further selection can be made by choosing one further unit per specialisation if required**	
Antennae (to be reported in the category of *electronics* - *C)	UTE NES105I A	Install and terminate wiring systems – *power and control – extra low voltage*
	UTE NES120 A	Install consumer video systems
	UTE NES209^ A	Attach flexible cords and plugs to electrical equipment connected to a single phase 250 volt supply (^^)
Appliances – Electrical (to be reported in the category of *electrical* - *B)	UTE NES209^ A	Attach flexible cords and plugs to electrical equipment connected to a single phase 250 volt supply (^^)
Appliances – Refrigeration (to be reported in the category of *refrigeration and air conditioning* - *E)	UTE NES209^ A	Attach flexible cords and plugs to electrical equipment connected to a single phase 250 volt supply (^^)
Automotive Accessories (to be reported in the category of *electronics* - *C)	UTE NES105I A	Install and terminate wiring systems – *power and control – extra low voltage*
	UTE NES209^ A	Attach flexible cords and plugs to electrical equipment connected to a single phase 250 volt supply (^^)

Continued

Specialisation One to be selected	**Optional Units A further selection can be made by choosing one further unit per specialisation if required**	
Business Equipment (to be reported in the category of *electronics* - *C)	UTE NES105I A	Install and terminate wiring systems - *power and control – extra low voltage*
	UTE NES209 A	Attach flexible cords and plugs to electrical equipment connected to a single phase 250 volt supply
Coil Winding (to be reported in the category of *electrical* - *B)	UTE NES209^ A	Attach flexible cords and plugs to electrical equipment connected to a single phase 250 volt supply (^^)
Component/Equipment Assembly (to be reported in the category of *electronics* - *C)	UTE NES111 A	Assembly processes
	UTE NES209^ A	Attach flexible cords and plugs to electrical equipment connected to a single phase 250 volt supply (^^)
Computer Assembly (to be reported in the category of *computer systems* - *A)	UTE NES209^ A	Attach flexible cords and plugs to electrical equipment connected to a single phase 250 volt supply (^^)
Renewable Energy (to be reported in the category of *electrical* - *B)	UTE NES105I A	Install and terminate wiring systems - *power and control – extra low voltage*
	UTE NES112 A	Install and maintain photovoltaic arrays
	UTE NES209^ A	Attach flexible cords and plugs to electrical equipment connected to a single phase 250 volt supply (^^)
Security Systems (to be reported in the category of *electronics* - *C)	UTE NES105I A	Install and terminate wiring systems - *power and control – extra low voltage*
	UTE NES209^ A	Attach flexible cords and plugs to electrical equipment connected to a single phase 250 volt supply (^^)
Fire Alarms (to be reported in the category of *electrical* - *B)	UTE NES105I A	Install and terminate wiring systems - *power and control – extra low voltage*
	UTE NES209^ A	Attach flexible cords and plugs to electrical equipment connected to a single phase 250 volt supply (^^)

^ *Endorsement to be reported,* unit number (qualifier)

^^ *Endorsement to be reported,* unit title (qualifier)

End of this qualification

Electrotechnology Technical Support – Certificate II

National Qualification No	UTE 2 06 04
Qualification Specialisation	'As determined by the specialisation selected below with relevant information included in records and on reports and/or transcripts attached to the testamur'

Core Units - All to be completed

UTE NES001B A	Undertake basic work activities – *electrical*
UTE NES201B C	Perform basic repair to electrical/electronic apparatus – *electrical*
UTE NES401B C	Perform functional apparatus checks – *electrical*

Elective Units - One to be completed

UTE NES003 A	Transport apparatus and materials
UTE NES005 A	Co-ordinate materials

Specialisation One to be selected	**Optional Units A further selection can be made by choosing one further unit per specialisation if required**	
Illuminated Signs	UTE NES101 A	Install pre-assembled neon signs
	UTE NES209^ A	Attach flexible cords and plugs to electrical equipment connected to a single phase 250 volt supply (^^)
Operational Support	UTE NES209^ A	Attach flexible cords and plugs to electrical equipment connected to a single phase 250 volt supply (^^)

^ *Endorsement to be reported,* unit number (qualifier)

^^ *Endorsement to be reported,* unit title (qualifier)

End of this qualification

Electrotechnology Fire Alarm Servicing – Certificate II

National Qualification No	UTE 2 07 06
Qualification Specialisation	Nil

Core Units - All to be completed

UTE NES020 A	Apply OHS practices in the work place
UTE NES021 A	Solve problems in extra-low voltage single path circuits
UTE NES022 A	Solve problems in multiple path d.c. circuits
UTE NES038 A	Use drawings, diagrams, schedules and manuals
UTE NES024 A	Document occupational hazards and risks in electrotechnology
UTE NES025 A	Participate in development and follow a personal competency development plan
UTE NES105I A	Install & terminate wiring systems (*Power & Control – Extra Low Voltage*)
UTE NES106C A	Install electrical/electronic apparatus (*Electronics*)
UTE NES121 A	Enter and verify operating instructions in microprocessor equipped devices
UTE NES122 A	Position and terminate fire detection and warning system apparatus
UTE NES202C A	Assemble/disassemble electrical/electronic components (*Electronics*)
UTE NES416 A	Verify compliance and functionality of fire protection installations

Elective Units – At least two Elective Units must be selected from the list of Group A and Group B Electives, of which no more than one must be chosen from Group A.

Group A - General Elective Units - One to be completed

UTE NES026 A	Maintain documentation
UTE NES027 A	Source and purchase material/parts for installation or service jobs
UTE NES028 A	Receive and store materials and equipment for electrotechnology work
UTE NES029 A	Provide basic instruction in the use of electrotechnology apparatus
UTE NES052 A	Interact with customers/clients for quality service

Continued

Group B - Technical Elective Units
One of the following groups of unit(s) to be completed

Group 1 – all units to be completed	
UTE NES201B B	Perform basic repair to electrical/electronic apparatus (Electrical)
Group 2 – all units to be completed	
UTE NES060 A	Carry out routine work activities in an Electrotech environment
Group 3 – all units to be completed	
UTE NES010^ A	Report on the integrity of explosion-protected equipment in hazardous areas (^^)
UTE NES124 A	Lay and connect cabling for direct access to telecommunication services

^ *Indicate Ex equipment endorsement*

^^ *Endorsement to be reported*, unit title (qualifier)

END OF QUALIFICATION

Electrotechnology Assembly and Servicing – Certificate III

National Qualification Code for in Electrotechnology Assembly and Servicing	UTE 3 01 04
Qualification Specialisation	'As determined by the specialisation selected below with relevant information included in records and on reports and/or transcripts attached to the testamur'

Core Units - All to be completed

UTE NES009 A	Participate in the training of others
UTE NES203B A	Assemble electrical/electronic apparatus - *electrical*
UTE NES206B A	Maintain and repair apparatus and associated circuits - *electrical*
UTE NES208^ A	Disconnect and reconnect fixed wired electrical equipment connected to supply up to 1000 volts a.c. or 1500 volts d.c. (^^)
UTE NES401B C	Perform functional apparatus checks - *electrical*
UTE NES402B B	Test apparatus and circuits - *electrical*
UTE NES501B B	Diagnose and rectify faults in apparatus and associated circuits - *electrical*

Elective Units - One to be completed

UTE NES002 A	Attend to breakdown
UTE NES005 A	Co-ordinate materials
UTE NES007 A	Supply projects
UTE NES008 A	Provide technical leadership in the workplace

Continued

Specialisation One to be selected	**Optional Units A further selection can be made by choosing one further unit per specialisation if required**	
Appliances		
Machines	UTE NES211^ A	Disconnect and reconnect explosion-protected electrical equipment connected to fixed wired supply up to 1000 volts a.c. or 1500 volts d.c. (^^)
	UTE NES215^ A	Overhaul and repair explosion-protected equipment (^^)
Maritime Maintenance	UTE NES211^ A	Disconnect and reconnect explosion-protected electrical equipment connected to fixed wired supply up to 1000 volts a.c. or 1500 volts d.c. (^^)
	UTE NES214^ A	Maintain electrical equipment in hazardous areas (^^)
Switchgear	UTE NES211^ A	Disconnect and reconnect explosion-protected electrical equipment connected to fixed wired supply up to 1000 volts a.c. or 1500 volts d.c. (^^)
	UTE NES215^ A	Overhaul and repair explosion-protected equipment (^^)

^ *Endorsement to be reported,* unit number (qualifier)

^^ *Endorsement to be reported,* unit title (qualifier)

End of this qualification

Electrotechnology Building Services – Certificate III

National Qualification No	UTE 3 02 99
Qualification Specialisation	'As determined by the specialisation selected below with relevant information included in records and on reports and/or transcripts attached to the testamur'

Core Units - All to be completed

UTE NES009 A	Participate in the training of others
UTE NES106C A	Install electrical/electronic apparatus – *electronics*
UTE NES206C B	Maintain and repair apparatus and associated circuits – *electronics*
UTE NES301C A	Undertake commissioning procedures of apparatus and associated circuits - *electronics*
UTE NES402C A	Test apparatus and circuits – *electronics*
UTE NES501C A	Diagnose and rectify faults in apparatus and associated circuits - *electronics*

Elective Units - One to be completed

UTE NES002 A	Attend to breakdown
UTE NES005 A	Co-ordinate materials
UTE NES007 A	Supply projects
UTE NES008 A	Provide technical leadership in the workplace

Specialisation One to be selected	**Optional Units A further selection can be made by choosing one further unit per specialisation if required**	
Fire Systems	UTE NES209^ A	Attach flexible cords and plugs to electrical equipment connected to a single phase 250 volt supply (^^)
	UTE NES105H A	Install and terminate wiring systems – *network communications*
Security Systems	UTE NES209^ A	Attach flexible cords and plugs to electrical equipment connected to a single phase 250 volt supply (^^)
	UTE NES105H A	Install and terminate wiring systems – *network communications*

^ *Endorsement to be reported*, unit number (qualifier)
^^ *Endorsement to be reported*, unit title (qualifier)

End of this qualification

Electrotechnology Business Administration – Certificate III

National Qualification No	UTE 3 03 99
Qualification Specialisation	'As determined by the specialisation selected below with relevant information included in records and on reports and/or transcripts attached to the testamur'

Core Units - All to be completed

UTE NES016 A	Promote detailed organisational services/products
UTE NES218 A	Maintain office records and administrative systems

Elective Units - One to be completed

UTE NES005 A	Co-ordinate materials
UTE NES009 A	Participate in the training of others

Specialisation
One to be selected

Administration

End of this qualification

Electrotechnology Communications – Certificate III

National Qualification No	UTE 3 04 02
Qualification Specialisation	'As determined by the specialisation selected below with relevant information included in records and on reports and/or transcripts attached to the testamur'

Core Units - All to be completed

UTE NES009 A	Participate in the training of others
UTE NES105G A	Install and terminate wiring systems – *cabling/wiring support and protection*
UTE NES105I A	Install and terminate wiring systems - *power and control – extra low voltage*
UTE NES106C A	Install electrical/electronic apparatus – *electronics*
UTE NES206C B	Maintain and repair apparatus and associated circuits - *electronics*
UTE NES301C A	Undertake commissioning procedures of apparatus and associated circuits – *electronics*
UTE NES402C A	Test apparatus and circuits - *electronics*
UTE NES501C A	Diagnose and rectify faults in apparatus and associated circuits - *electronics*

Elective Units - One to be completed

UTE NES002 A	Attend to breakdown
UTE NES005 A	Co-ordinate materials
UTE NES007 A	Supply projects
UTE NES008 A	Provide technical leadership in the workplace

Specialisation One to be selected	**Optional Units A further selection can be made by choosing one further unit per specialisation if required**	
Broadcast	UTE NES102C A	Assemble and erect antennae and associated hardware – *electronic*
Microwave	UTE NES102C A	Assemble and erect antennae and associated hardware – *electronic*
Satellite	UTE NES102C A	Assemble and erect antennae and associated hardware – *electronic*

End of this qualification

Electrotechnology Computer Systems – Certificate III

National Qualification No	UTE 3 05 99
Qualification Specialisation	'As determined by the specialisation selected below with relevant information included in records and on reports and/or transcripts attached to the testamur'

Core Units - All to be completed

UTE NES009 A	Participate in the training of others
UTE NES106A A	Install electrical/electronic apparatus – *computer systems*
UTE NES206A A	Maintain and repair apparatus and associated circuits – *computer systems*
UTE NES301A A	Undertake commissioning procedures of apparatus and associated circuits - *computer systems*
UTE NES402A A	Test apparatus and circuits - *computer systems*
UTE NES501A A	Diagnose and rectify faults in apparatus and associated circuits - *computer systems*

Elective Units - One to be completed

UTE NES002 A	Attend to breakdown
UTE NES005 A	Co-ordinate materials
UTE NES007 A	Supply projects
UTE NES008 A	Provide technical leadership in the workplace

Continued

Specialisation One to be selected	**Optional Units A further selection can be made by choosing one further unit per specialisation if required**	
Business Equipment	UTE NES209^ A	Attach flexible cords and plugs to electrical equipment connected to a single phase 250 volt supply (^^)
Control	UTE NES209^ A	Attach flexible cords and plugs to electrical equipment connected to a single phase 250 volt supply (^^)
Data Capture	UTE NES209^ A	Attach flexible cords and plugs to electrical equipment connected to a single phase 250 volt supply (^^)
Networks	UTE NES209^ A	Attach flexible cords and plugs to electrical equipment connected to a single phase 250 volt supply (^^)

^ *Endorsement to be reported,* unit number (qualifier)

^^ *Endorsement to be reported,* unit title (qualifier)

End of this qualification

Electrotechnology Data Communications – Certificate III

National Qualification No	UTE 3 06 99
Qualification Specialisation	'As determined by the specialisation selected below with relevant information included in records and on reports and/or transcripts attached to the testamur'

Core Units - All to be completed

UTE NES009 A	Participate in the training of others
UTE NES105G A	Install and terminate wiring systems – *cabling/wiring support and protection*
UTE NES105H A	Install and terminate wiring systems – *network communications*
UTE NES105I A	Install and terminate wiring systems – *power and control – extra low voltage*
UTE NES106F A	Install electrical/electronic apparatus – *data communications*
UTE NES206F A	Maintain and repair apparatus and associated circuits - *data communications*
UTE NES301F A	Undertake commissioning procedures of apparatus and associated circuits - *data communications*
UTE NES402F A	Test apparatus and circuits - *data communications*
UTE NES501FA	Diagnose and rectify faults in apparatus and associated circuits - *data communications*

Elective Units - One to be completed

UTE NES002 A	Attend to breakdown
UTE NES005 A	Co-ordinate materials
UTE NES007 A	Supply projects
UTE NES008 A	Provide technical leadership in the workplace

Continued

Specialisation One to be selected	**Optional Units A further selection can be made by choosing one further unit per specialisation if required**	
Fire Protection	UTE NES208^ A	Disconnect and reconnect fixed wired electrical equipment connected to supply up to 1000 volts a.c. or 1500 volts d.c. (^^)
	UTE NES209^ A	Attach flexible cords and plugs to electrical equipment connected to a single phase 250 volt supply (^^)
Networks	UTE NES108 A	Install overhead communications cables
	UTE NES109 A	Install below ground communications cables
	UTE NES209^ A	Attach flexible cords and plugs to electrical equipment connected to a single phase 250 volt supply (^^)
Security Systems	UTE NES208^ A	Disconnect and reconnect fixed wired electrical equipment connected to supply up to 1000 volts a.c. or 1500 volts d.c. (^^)
	UTE NES209^ A	Attach flexible cords and plugs to electrical equipment connected to a single phase 250 volt supply (^^)

^ *Endorsement to be reported*, unit number (qualifier)

^^ *Endorsement to be reported*, unit title (qualifier)

End of this qualification

Electrotechnology Entertainment and Servicing – Certificate III

National Qualification No	UTE 3 07 02
Qualification Specialisation	'As determined by the specialisation selected below with relevant information included in records and on reports and/or transcripts attached to the testamur'

Core Units - All to be completed

UTE NES009 A	Participate in the training of others
UTE NES105G A	Install and terminate wiring systems – *cabling/wiring support and protection*
UTE NES105I A	Install and terminate wiring systems - *power and control – extra low voltage*
UTE NES106C A	Install electrical/electronic apparatus - *electronics*
UTE NES206C B	Maintain and repair apparatus and associated circuits - *electronics*
UTE NES301CA	Undertake commissioning procedures of apparatus and associated circuits - *electronics*
UTE NES402C A	Test apparatus and circuits - *electronics*
UTE NES501C A	Diagnose and rectify faults in apparatus and associated circuits - *electronics*

Elective Units - One to be completed

UTE NES002 A	Attend to breakdown
UTE NES005 A	Co-ordinate materials
UTE NES007 A	Supply projects
UTE NES008 A	Provide technical leadership in the workplace

Continued

Specialisation **One to be selected**	**Optional Units** **A further selection can be made by choosing one further unit per specialisation if required**	
Audio - Analogue	UTE NES209^ A	Attach flexible cords and plugs to electrical equipment connected to a single phase 250 volt supply (^^)
Audio - Digital	UTE NES209^ A	Attach flexible cords and plugs to electrical equipment connected to a single phase 250 volt supply (^^)
Electronic Appliances	UTE NES209^ A	Attach flexible cords and plugs to electrical equipment connected to a single phase 250 volt supply (^^)
Video	UTE NES102c A	Assemble and erect antennae and associated hardware – *electronic*
	UTE NES209^ A	Attach flexible cords and plugs to electrical equipment connected to a single phase 250 volt supply (^^)

^ *Endorsement to be reported*, unit number (qualifier)

^^ *Endorsement to be reported*, unit title (qualifier)

End of this qualification

Electrotechnology Instrumentation – Certificate III

National Qualification No	UTE 3 08 99
Qualification Specialisation	'As determined by the specialisation selected below with relevant information included in records and on reports and/or transcripts attached to the testamur'

Core Units - All to be completed

UTE NES009 A	Participate in the training of others
UTE NES105G A	Install and terminate wiring systems – *cabling/wiring support and protection*
UTE NES105I A	Install and terminate wiring systems - *power and control – extra low voltage*
UTE NES106D A	Install electrical/electronic apparatus - *instrumentation*
UTE NES206D A	Maintain and repair apparatus and associated circuits - *instrumentation*
UTE NES301D A	Undertake commissioning procedures of apparatus and associated circuits - *instrumentation*
UTE NES402D A	Test apparatus and circuits - *instrumentation*
UTE NES501D A	Diagnose and rectify faults in apparatus and associated circuits - *instrumentation*

Elective Units - One to be completed

UTE NES002 A	Attend to breakdown
UTE NES005 A	Co-ordinate materials
UTE NES007 A	Supply projects
UTE NES008 A	Provide technical leadership in the workplace

Specialisation One to be selected	**Optional Units A further selection can be made by choosing one further unit per specialisation if required**	
Control	UTE NES209^ A	Attach flexible cords and plugs to electrical equipment connected to a single phase 250 volt supply (^^)
Measurement	UTE NES209^ A	Attach flexible cords and plugs to electrical equipment connected to a single phase 250 volt supply (^^)

^ *Endorsement to be reported,* unit number (qualifier)

^^ *Endorsement to be reported,* unit title (qualifier)

End of this qualification

Electrotechnology Refrigeration and Air Conditioning – Certificate III

National Qualification No	UTE 3 09 99
Qualification Specialisation	'As determined by the specialisation selected below with relevant information included in records and on reports and/or transcripts attached to the testamur'

Core Units - All to be completed

UTE NES009 A	Participate in the training of others
UTE NES103E A	Install/maintain piping and tubing - *refrigeration and air conditioning*
UTE NES106E A	Install electrical/electronic apparatus - *refrigeration and air conditioning*
UTE NES206E A	Maintain and repair apparatus and associated circuits - *refrigeration and air conditioning*
UTE NES208^ A	Disconnect and reconnect fixed wired electrical equipment connected to supply up to 1000 volts a.c. or 1500 volts d.c. (^^)
UTE NES209^ A	Attach flexible cords and plugs to electrical equipment connected to a single phase 250 volt supply (^^)
UTE NES210^ A	Attach flexible cords and plugs to electrical equipment connected to a supply up to 1000 volts a.c. or 1500 volts d.c. (^^)
UTE NES301E A	Undertake commissioning procedures of apparatus and associated circuits - *refrigeration and air conditioning*
UTE NES402E A	Test apparatus and circuits - *refrigeration and air conditioning*
UTE NES501E A	Diagnose and rectify faults in apparatus and associated circuits - *refrigeration and air conditioning*
UTE NES505^ A	Locate and rectify fault(s) in electrical equipment intended to operate to a connected fixed wired supply up to 1000 volts a.c. or 1500 volts d.c. following prescribed procedures (^^)

Elective Units - One to be completed

UTE NES002 A	Attend to breakdown
UTE NES005 A	Co-ordinate materials
UTE NES007 A	Supply projects
UTE NES008 A	Provide technical leadership in the workplace

Continued

Specialisation One to be selected	**Optional Units A further selection can be made by choosing one further unit per specialisation if required**	
Commercial Air Conditioning	UTE NES011 A	Monitor energy usage in an electrotechnology context
	UTE NES105I A	Install and terminate wiring systems - *power and control – extra low voltage*
Commercial Refrigeration	UTE NES011 A	Monitor energy usage in an electrotechnology context
	UTE NES105I A	Install and terminate wiring systems - *power and control – extra low voltage*
Domestic Appliances	UTE NES011 A	Monitor energy usage in an electrotechnology context
	UTE NES105I A	Install and terminate wiring systems - *power and control – extra low voltage*
Hotel/Club Refrigeration	UTE NES011 A	Monitor energy usage in an electrotechnology context
	UTE NES105I A	Install and terminate wiring systems - *power and control – extra low voltage*
Industrial Refrigeration	UTE NES011 A	Monitor energy usage in an electrotechnology context
	UTE NES105I A	Install and terminate wiring systems - *power and control – extra low voltage*
Transport Refrigeration and Air Conditioning	UTE NES011 A	Monitor energy usage in an electrotechnology context
	UTE NES105I A	Install and terminate wiring systems - *power and control – extra low voltage*
Vending Equipment Refrigeration	UTE NES011 A	Monitor energy usage in an electrotechnology context
	UTE NES105I A	Install and terminate wiring systems - *power and control – extra low voltage*

^ *Endorsement to be reported,* unit number (qualifier)

^^ *Endorsement to be reported,* unit title (qualifier)

End of this qualification

Electrotechnology Scanning – Certificate III

National Qualification No	UTE 3 10 99
Qualification Specialisation	'As determined by the specialisation selected below with relevant information included in records and on reports and/or transcripts attached to the testamur'

Core Units - All to be completed

UTE NES009 A	Participate in the training of others
UTE NES105G A	Install and terminate wiring systems – *cabling/wiring support and protection*
UTE NES105I A	Install and terminate wiring systems - *power and control – extra low voltage*
UTE NES106C A	Install electrical/electronic apparatus - *electronics*
UTE NES206C B	Maintain and repair apparatus and associated circuits - *electronics*
UTE NES301C A	Undertake commissioning procedures of apparatus and associated circuits - *electronics*
UTE NES402C A	Test apparatus and circuits - *electronics*
UTE NES501C A	Diagnose and rectify faults in apparatus and associated circuits - *electronics*

Elective Units - One to be completed

UTE NES002 A	Attend to breakdown
UTE NES005 A	Co-ordinate materials
UTE NES007 A	Supply projects
UTE NES008 A	Provide technical leadership in the workplace

Specialisation One to be selected	**Optional Units A further selection can be made by choosing one further unit per specialisation if required**	
Radar	UTE NES102C A	Assemble and erect antennae and associated hardware – *electronics*
	UTE NES209^ A	Attach flexible cords and plugs to electrical equipment connected to a single phase 250 volt supply (^^)
Sonar	UTE NES209^ A	Attach flexible cords and plugs to electrical equipment connected to a single phase 250 volt supply (^^)

^ *Endorsement to be reported*, unit number (qualifier)

^^ *Endorsement to be reported*, unit title (qualifier)

End of this qualification

Electrotechnology Systems Electrician – Certificate III

National Qualification No	UTE 3 11 99
Qualification Specialisation	'As determined by the specialisation selected below with relevant information included in records and on reports and/or transcripts attached to the testamur'

Core Units - All to be completed

UTE NES009 A	Participate in the training of others
UTE NES105G A	Install and terminate wiring systems – *cabling/wiring support and protection*
UTE NES105J A	Install and terminate wiring systems – *power and control – low voltage*
UTE NES106B A	Install electrical/electronic apparatus - *electrical*
UTE NES206B A	Maintain and repair apparatus and associated circuits - *electrical*
UTE NES301B A	Undertake commissioning procedures of apparatus and associated circuits - *electrical*
UTE NES402B A	Test apparatus and circuits - *electrical*
UTE NES501B A	Diagnose and rectify faults in apparatus and associated circuits - *electrical*

Elective Units - One to be completed

UTE NES002 A	Attend to breakdown
UTE NES005 A	Co-ordinate materials
UTE NES007 A	Supply projects
UTE NES008 A	Provide technical leadership in the workplace

Continued

Specialisation **One to be selected**	**Optional Units** **A further selection can be made by choosing one further unit per specialisation if required**	
Control	UTE NES011 A	Monitor energy usage in an electrotechnology context
	UTE NES105H A	Install and terminate wiring systems – *network communications*
	UTE NES214^ A	Maintain electrical equipment in hazardous areas (^^)
Energy Supply	UTE NES011 A	Monitor energy usage in an electrotechnology context
	UTE NES105H A	Install and terminate wiring systems – *network communications*
	UTE NES214^ A	Maintain electrical equipment in hazardous areas (^^)
Fire Protection	UTE NES105H A	Install and terminate wiring systems – *network communications*
	UTE NES107^ A	Install explosion-protected equipment and wiring systems (^^)
Installation and Servicing	UTE NES011 A	Monitor energy usage in an electrotechnology context
	UTE NES105H A	Install and terminate wiring systems – *network communications*
	UTE NES107^ A	Install explosion-protected equipment and wiring systems (^^)
Maritime Installation	UTE NES105H A	Install and terminate wiring systems – *network communications*
	UTE NES107^ A	Install explosion-protected equipment and wiring systems (^^)
Mining	UTE NES011 A	Monitor energy usage in an electrotechnology context
	UTE NES105H A	Install and terminate wiring systems – *network communications*
	UTE NES214^ A	Maintain electrical equipment in hazardous areas (^^)

Continued

Specialisation One to be selected	**Optional Units A further selection can be made by choosing one further unit per specialisation if required**	
Plant Servicing	UTE NES011 A	Monitor energy usage in an electrotechnology context
	UTE NES105H A	Install and terminate wiring systems – *network communications*
	UTE NES214^ A	Maintain electrical equipment in hazardous areas (^^)
Process	UTE NES011 A	Monitor energy usage in an electrotechnology context
	UTE NES105H A	Install and terminate wiring systems – *network communications*
	UTE NES110 A	Install and maintain fluid measurement equipment
	UTE NES214^ A	Maintain electrical equipment in hazardous areas (^^)
Security	UTE NES105H A	Install and terminate wiring systems – *network communications*
	UTE NES107^ A	Install explosion-protected equipment and wiring systems (^^)
Signalling (Rail)	UTE NES105H A	Install and terminate wiring systems – *network communications*
	UTE NES214^ A	Maintain electrical equipment in hazardous areas (^^)

^ *Endorsement to be reported,* unit number (qualifier)

^^ *Endorsement to be reported,* unit title (qualifier)

End of this qualification

Electrotechnology Fire Protection Control – Certificate III

National Qualification No	UTE 3 12 06
Qualification Specialisation	Nil

Core Units - All to be completed

UTE NES020 A	Apply OHS practices in the work place
UTE NES021 A	Solve problems in extra-low voltage single path circuits
UTE NES022 A	Solve problems in multiple path d.c. circuits
UTE NES038 A	Use drawings, diagrams, schedules and manuals
UTE NES024 A	Document occupational hazards and risks in electrotechnology
UTE NES030 A	Participate in fire protection control work and competency development activities
UTE NES031 A	Solve problems in multiple path a.c. circuits
UTE NES105H A	Install & terminate wiring systems (*Network Communications*)
UTE NES105I A	Install & terminate wiring systems (*Power & Control – Extra Low Voltage*)
UTE NES106C A	Install electrical/electronic apparatus (*Electronics*)
UTE NES121 A	Enter and verify operating instructions in microprocessor equipped devices
UTE NES122 A	Position and terminate fire detection and warning system apparatus
UTE NES123 A	Enter and verify programs in preparation for commissioning fire protection systems
UTE NES202C A	Assemble/disassemble electrical/electronic components (*Electronics*)
UTE NES306 A	Commission commercial fire protection systems
UTE NES416 A	Verify compliance and functionality of fire protection installations
UTE NES508 A	Find and repair faults in fire protection systems

Elective Units – At least three Elective Units must be selected from the list of Group A and Group B Electives, of which no more than two must be chosen from Group A.

Group A – General Elective Units - Two to be completed

UTE NES026 A	Maintain documentation
UTE NES027 A	Source and purchase material/parts for installation or service jobs
UTE NES029 A	Provide basic instruction in the use of electrotechnology apparatus

Continued……..

UTE NES036 A	Use basic computer applications relevant to a workplace
UTE NES037 A	Provide quotations for installation or service jobs
UTE NES052 A	Interact with customers/clients for quality service
UTE NES221 A	Comply with scheduled and preventative maintenance program processes

Group B – Technical Specialisation Elective Units
One of the following groups to be completed

Group 1

UTE NES012^ A	Attend to breakdowns in hazardous areas (Ex n)
UTE NES034 A	Use engineering applications software
UTE NES107^ A	Install explosion-protected equipment & wiring systems (Ex mixed)
UTE NES125 A	Install and maintain integrity of fixed gas detection equipment
UTE NES208Q A	Disconnect & reconnect fixed wired electrical equipment 1,000Vac/1,500Vdc (Control Devices)
UTE NES214^ A	Maintain equipment in hazardous areas (Ex mixed)

Group 2

UTE NES012^ A	Attend to breakdowns in hazardous areas (Ex n)
UTE NES034 A	Use engineering applications software
UTE NES035 A	Use and maintain the integrity of portable gas detection devices
UTE NES107^ A	Install explosion-protected equipment & wiring systems (Ex mixed)
UTE NES125 A	Install and maintain integrity of fixed gas detection equipment
UTE NES214^ A	Maintain equipment in hazardous areas (Ex mixed)

Group 3

UTE NES012^ A	Attend to breakdowns in hazardous areas (Ex n)
UTE NES034 A	Use engineering applications software
UTE NES035 A	Use and maintain the integrity of portable gas detection devices
UTE NES105H A	Install & terminate wiring systems (Network Communications)
UTE NES106F A	Install electrical/electronic apparatus (Data Communications)
UTE NES125 A	Install and maintain integrity of fixed gas detection equipment

^ *Indicate Ex equipment endorsement*
END OF QUALIFICATION

Electrotechnology Apparatus Servicing – Certificate IV

National Qualification No	UTE 4 01 99
Qualification Specialisation	'As determined by the specialisation selected below with relevant information included in records and on reports and/or transcripts attached to the testamur'

Core Units - All to be completed

UTE NES207B A	Co-ordinate maintenance of apparatus and associated systems' circuits – *electrical*
UTE NES403B A	Test apparatus and complex circuits - *electrical*
UTE NES502B A	Diagnose and rectify faults in apparatus and associated complex circuits – *electrical*
UTE NES703B A	Plan the installation of electrical/electronic apparatus and associated wiring/piping systems - *electrical*

Elective Units - One to be completed

UTE NES002 A	Attend to breakdown
UTE NES008 A	Provide technical leadership in the workplace
UTE NES601 A	Co-ordinate work of others

Specialisation
One to be selected

AC Machines
AC/DC Machines

End of this qualification

Electrotechnology Building Services – Certificate IV

National Qualification No	UTE 4 02 99
Qualification Specialisation	'As determined by the specialisation selected below with relevant information included in records and on reports and/or transcripts attached to the testamur'

Core Units - All to be completed

TBA	
TBA	
TBA	
TBA	

Elective Units - One to be completed

TBA	
TBA	
TBA	

Specialisation
One to be selected

TBA	
TBA	
TBA	
TBA	

End of this qualification

Electrotechnology Communications – Certificate IV

National Qualification No	UTE 4 03 02
Qualification Specialisation	'As determined by the specialisation selected below with relevant information included in records and on reports and/or transcripts attached to the testamur'

Core Units - All to be completed

UTE NES207C A	Co-ordinate maintenance of apparatus and associated systems' circuits - *electronics*
UTE NES302C A	Undertake commissioning procedures of apparatus and associated complex circuits - *electronics*
UTE NES403C A	Test apparatus and complex circuits - *electronics*
UTE NES502C A	Diagnose and rectify faults in apparatus and associated complex circuits - *electronics*
UTE NES703C A	Plan the installation of electrical/electronic apparatus and associated wiring/piping systems - *electronics*

Elective Units - One to be completed

UTE NES002 A	Attend to breakdown
UTE NES008 A	Provide technical leadership in the workplace
UTE NES601 A	Co-ordinate work of others

Specialisation **One to be selected**	**Optional Units** **A further selection can be made by choosing one further unit per specialisation if required**
Broadcast	UTE NES220 A Maintain and repair digital televisions
Broadcast Station Operations	
Microwave	
Satellite	

End of this qualification

Electrotechnology Computer Systems – Certificate IV

National Qualification No	UTE 4 04 99
Qualification Specialisation	'As determined by the specialisation selected below with relevant information included in records and on reports and/or transcripts attached to the testamur'

Core Units - All to be completed

UTE NES207A A	Co-ordinate maintenance of apparatus and associated systems' circuits – *computer systems*
UTE NES302A A	Undertake commissioning procedures of apparatus and associated complex circuits - *computer systems*
UTE NES403A A	Test apparatus and complex circuits - *computer systems*
UTE NES502A A	Diagnose and rectify faults in apparatus and associated complex circuits - *computer systems*
UTE NES703A A	Plan the installation of electrical/electronic apparatus and associated wiring/piping systems - *computer systems*

Elective Units - One to be completed

UTE NES002 A	Attend to breakdown
UTE NES008 A	Provide technical leadership in the workplace
UTE NES601 A	Co-ordinate work of others

Specialisation
One to be selected

Control
Networks

End of this qualification

Electrotechnology Contracting – Certificate IV

National Qualification No	UTE 4 05 99
Qualification Specialisation	'As determined by the specialisation selected below with relevant information included in records and on reports and/or transcripts attached to the testamur'

Core Units - All to be completed

UTE NES607 A	Develop and apply electrotechnology contracting business plans
UTE NES608 A	Apply electrotechnology contracting business practices

Elective Units - One to be completed

UTE NES008 A	Provide technical leadership in the workplace
UTE NES601 A	Co-ordinate work of others

Specialisation One to be selected	**Optional Units A further selection can be made by choosing one further unit per specialisation if required**
Administration (to be reported in the category of *administration* - *N)	
Technical (to be reported in the category of *technical* - *P)	UTE NES017 A Project tendering

End of this qualification

Electrotechnology Entertainment and Servicing – Certificate IV

National Qualification No	UTE 4 06 02
Qualification Specialisation	'As determined by the specialisation selected below with relevant information included in records and on reports and/or transcripts attached to the testamur'

Core Units - All to be completed

UTE NES207C A	Co-ordinate maintenance of apparatus and associated systems' circuits - *electronics*
UTE NES302C A	Undertake commissioning procedures of apparatus and associated complex circuits – *electronics*
UTE NES403C A	Test apparatus and complex circuits - *electronics*
UTE NES502C A	Diagnose and rectify faults in apparatus and associated complex circuits - *electronics*
UTE NES703C A	Plan the installation of electrical/electronic apparatus and associated wiring/piping systems - *electronics*

Elective Units - One to be completed

UTE NES002 A	Attend to breakdown
UTE NES008 A	Provide technical leadership in the workplace
UTE NES601 A	Co-ordinate work of others

Specialisation One to be selected	**Optional Units A further selection can be made by choosing one further unit per specialisation if required**
Audio Systems	
Television	UTE NES220 A Maintain and repair digital televisions
Video Cassette Recorder	

End of this qualification

Electrotechnology Explosion-protection – Certificate IV

National Qualification No	UTE 4 07 06
Qualification Specialisation	'As determined by the specialisation selected below with relevant information included in records and on reports and/or transcripts attached to the testamur'

Core Units - All to be completed

UTE NES012^ A	Attend to breakdowns in hazardous areas (^^)
UTE NES107^ A	Install explosion-protected equipment and wiring systems (^^)
UTE NES214^ A	Maintain equipment in hazardous areas (^^)
UTE NES405 B	Inspect/investigate electrical apparatus and associated circuits
UTE NES502B A	Diagnose and rectify faults in apparatus and associated complex circuits - *electrical*

Elective Units - One to be completed

UTE NES008 A	Provide technical leadership in the workplace
UTE NES601 A	Co-ordinate work of others

Specialisation One to be selected	**Optional Units A further selection can be made by choosing one further unit per specialisation if required**	
Equipment	UTE NES215^ A	Overhaul and repair explosion-protected equipment (^^)
Installation and Inspection	UTE NES408^ A	Test installation in hazardous areas (^^)
	UTE NES410^ A	Inspect in detail hazardous area installations (^^)
	UTE NES707 A	Design electrical installations in hazardous areas

^ *Endorsement to be reported*, unit number (qualifier)

^^ *Endorsement to be reported*, unit title (qualifier)

End of this qualification

Electrotechnology Inspection and Audits – Certificate IV

National Qualification No	UTE 4 08 99
Qualification Specialisation	'As determined by the specialisation selected below with relevant information included in records and on reports and/or transcripts attached to the testamur'

Core Units - All to be completed

TBA	
TBA	
TBA	

Elective Units - One to be completed

TBA	
TBA	
TBA	

Specialisation
One to be selected

Communications
Electrical
Electrical Equipment in Hazardous Areas
Energy Supply
Fire Protection
Lifts
Security

End of this qualification

Electrotechnology Instrumentation – Certificate IV

National Qualification No	UTE 4 09 99
Qualification Specialisation	'As determined by the specialisation selected below with relevant information included in records and on reports and/or transcripts attached to the testamur'

Core Units - All to be completed

UTE NES207D A	Co-ordinate maintenance of apparatus and associated systems' circuits - *instrumentation*
UTE NES302D A	Undertake commissioning procedures of apparatus and associated complex circuits - *instrumentation*
UTE NES403D A	Test apparatus and complex circuits - *instrumentation*
UTE NES502D A	Diagnose and rectify faults in apparatus and associated complex circuits - *instrumentation*
UTE NES703D A	Plan the installation of electrical/electronic apparatus and associated wiring/piping systems - *instrumentation*

Elective Units - One to be completed

UTE NES002 A	Attend to breakdown
UTE NES008 A	Provide technical leadership in the workplace
UTE NES601 A	Co-ordinate work of others

Specialisation
One to be selected

Control
Measurement

End of this qualification

Electrotechnology Radar Systems – Certificate IV

National Qualification No	UTE 4 10 99
Qualification Specialisation	'As determined by the specialisation selected below with relevant information included in records and on reports and/or transcripts attached to the testamur'

Core Units - All to be completed

UTE NES207C A	Co-ordinate maintenance of apparatus and associated systems' circuits - *electronics*
UTE NES302C A	Undertake commissioning procedures of apparatus and associated complex circuits – *electronics*
UTE NES403C A	Test apparatus and complex circuits - *electronics*
UTE NES502C A	Diagnose and rectify faults in apparatus and associated complex circuits – *electronics*
UTE NES703C A	Plan the installation of electrical/electronic apparatus and associated wiring/piping systems – *electronics*

Elective Units - One to be completed

UTE NES002 A	Attend to breakdown
UTE NES008 A	Provide technical leadership in the workplace
UTE NES601 A	Co-ordinate work of others

End of this qualification

Electrotechnology Refrigeration and Air Conditioning – Certificate IV

National Qualification No	UTE 4 11 99
Qualification Specialisation	'As determined by the specialisation selected below with relevant information included in records and on reports and/or transcripts attached to the testamur'

Core Units - All to be completed

UTE NES207E A	Co-ordinate maintenance of apparatus and associated systems' circuits – *refrigeration and air conditioning*
UTE NES302E A	Undertake commissioning procedures of apparatus and associated complex circuits - *refrigeration and air conditioning*
UTE NES403E A	Test apparatus and complex circuits - *refrigeration and air conditioning*
UTE NES502E A	Diagnose and rectify faults in apparatus and associated complex circuits - *refrigeration and air conditioning*
UTE NES703E A	Plan the installation of electrical/electronic apparatus and associated wiring/piping systems - *refrigeration and air conditioning*

Elective Units - One to be completed

UTE NES002 A	Attend to breakdown
UTE NES008 A	Provide technical leadership in the workplace
UTE NES601 A	Co-ordinate work of others

Specialisation
One to be selected

Control Systems
Heating Ventilation and Air Conditioning Systems
Refrigeration Systems

End of this qualification

Electrotechnology Systems Electrician – Certificate IV

National Qualification No	UTE 4 12 02
Qualification Specialisation	'As determined by the specialisation selected below with relevant information included in records and on reports and/or transcripts attached to the testamur'

Core Units - All to be completed

UTE NES207B A	Co-ordinate maintenance of apparatus and associated systems' circuits - *electrical*
UTE NES302B A	Undertake commissioning procedures of apparatus and associated complex circuits - *electrical*
UTE NES403B A	Test apparatus and complex circuits - *electrical*
UTE NES502B A	Diagnose and rectify faults in apparatus and associated complex circuits - *electrical*
UTE NES703B A	Plan the installation of electrical/electronic apparatus and associated wiring/piping systems - *electrical*

Elective Units - One to be completed

UTE NES002 A	Attend to breakdown
UTE NES008 A	Provide technical leadership in the workplace
UTE NES601 A	Co-ordinate work of others

Continued – 1 of 4

Specialisation One to be selected	**Optional Units A further selection can be made by choosing one further unit per specialisation if required**	
Control	UTE NES103B A	Install/maintain piping and tubing - *electrical*
	UTE NES205L B	Conduct powerline switching – *high voltage switching*
	UTE NES414 A	Program and verify programmable controllers
	UTE NES415 A	Program and verify programmable controller systems
	UTE NES507 A	Evaluate performance of motor control systems
Energy Supply	UTE NES115 A	Install and maintain a grid connected inverter system
	UTE NES205L B	Conduct powerline switching – *high voltage switching*
	UTE NES414 A	Program and verify programmable controllers
	UTE NES415 A	Program and verify programmable controller systems
	UTE NES507 A	Evaluate performance of motor control systems
Hazardous Areas	UTE NES107^ A	Install explosion-protected equipment and wiring systems (^^)
	UTE NES408^ A	Test installations in hazardous areas (^^)
	UTE NES410^ A	Inspect in detail hazardous area installations (^^)
	UTE NES414 A	Program and verify programmable controllers
	UTE NES415 A	Program and verify programmable controller systems
	UTE NES507 A	Evaluate performance of motor control systems

Continued – 2 of 4

Specialisation (cont) **One to be selected**	**Optional Units (cont)** **A further selection can be made by choosing one further unit per specialisation if required**	
Installation and Servicing	UTE NES104 A	Install and maintain energy management equipment
	UTE NES115 A	Install and maintain a grid connected inverter system
	UTE NES205L B	Conduct powerline switching – *high voltage switching*
	UTE NES405 B	Inspect/investigate electrical apparatus and associated circuits
	UTE NES704 A	Plan Illumination Systems
	UTE NES023 A	Apply Contracting and Estimating Procedures
	UTE NES414 A	Program and verify programmable controllers
	UTE NES415 A	Program and verify programmable controller systems
	UTE NES507 A	Evaluate performance of motor control systems
Mining	UTE NES205L B	Conduct powerline switching – *high voltage switching*
	UTE NES212 A	Disconnect and reconnect designated electrical equipment connected to supplies up to 3300 volts
	UTE NES213 A	Attach flexible cables and plugs to electrical equipment connected to a high voltage supply
	UTE NES414 A	Program and verify programmable controllers
	UTE NES415 A	Program and verify programmable controller systems
	UTE NES507 A	Evaluate performance of motor control systems

Continued – 3 of 4

Specialisation (cont) **One to be selected**	**Optional Units (cont)** **A further selection can be made by choosing one further unit per specialisation if required**	
Process	UTE NES414 A	Program and verify programmable controllers
	UTE NES415 A	Program and verify programmable controller systems
	UTE NES507 A	Evaluate performance of motor control systems

^ *Endorsement to be reported*, unit number (qualifier)

^^ *Endorsement to be reported*, unit title (qualifier)

End of this qualification – 4 of 4

Electrotechnology Renewable Energy – Certificate IV

National Qualification No	UTE 4 13 01
Qualification Specialisation	'As determined by the specialisation selected below with relevant information included in records and on reports and/or transcripts attached to the testamur'

Core Units - All to be completed

UTE NES219 A	Co-ordinate maintenance of renewable energy apparatus and systems
UTE NES305 A	Undertake commissioning procedures of renewable energy apparatus and systems
UTE NES412 A	Test renewable energy apparatus and systems
UTE NES506 A	Diagnose and rectify faults in renewable energy apparatus and systems
UTE NES710 A	Plan the installation of renewable energy apparatus and systems

Elective Units - One to be completed

UTE NES002 A	Attend to breakdown
UTE NES008 A	Provide technical leadership in the workplace
UTE NES601 A	Co-ordinate work of others

Specialisation One to be selected	**Optional Units A further selection can be made by choosing one further unit per specialisation if required**	
Fuel Cells	No optional unit applies	
Micro-hydro Systems	UTE NES113 A	Install and maintain a micro-hydro system
Wind Energy Systems	UTE NES114 A	Install and maintain a small wind energy conversion system

End of this qualification

Electrotechnology Fire Protection Control – Certificate IV

National Qualification No	UTE 4 14 06
Qualification Specialisation	Nil

Core Units - All to be completed

UTE NES009 A	Participate in the training of others
UTE NES025 A	Participate in development and follow a personal competency development plan
UTE NES032 A	Implement and monitor OHS policies and procedures
UTE NES033 A	Compile and produce an electrotechnology report
UTE NES105G A	Install and terminate wiring systems – *cabling/wiring support and protection*
UTE NES105J A	Install and terminate wiring systems – *power and control – low voltage*
UTE NES106B A	Install electrical/electronic apparatus - *electrical*
UTE NES122 A	Position and terminate fire detection and warning system apparatus
UTE NES123 A	Enter and verify programs in preparation for commissioning fire protection systems
UTE NES206B A	Maintain and repair apparatus and associated circuits - *electrical*
UTE NES301B A	Undertake commissioning procedures of apparatus and associated circuits - *electrical*
UTE NES305 A	Commission commercial fire protection systems
UTE NES402B A	Test apparatus and circuits - *electrical*
UTE NES416 A	Verify compliance and functionality of fire protection installations
UTE NES501B A	Diagnose and rectify faults in apparatus and associated circuits - *electrical*
UTE NES508 A	Find and repair faults in fire protection systems

<u>Elective Units</u> – At least four Elective Units must be selected from the list of Group A and Group B Electives, of which no more than three must be chosen from Group A.

Group A – General Elective Units - Three to be completed

UTE NES026 A	Maintain documentation
UTE NES027 A	Source and purchase material/parts for installation or service jobs
UTE NES029 A	Provide basic instruction in the use of electrotechnology apparatus

Continued……

UTE NES036 A	Use basic computer applications relevant to a workplace
UTE NES037 A	Provide quotations for installation or service jobs
UTE NES052 A	Interact with customers/clients for quality service
UTE NES219 A	Comply with scheduled and preventative maintenance program processes

Group B – Technical Specialisation Elective Units
One of the following groups of unit(s) to be completed

Group 1 – all units to be completed

UTE NES107^ A	Install explosion-protected equipment & wiring systems (Ex mixed)
UTE NES214^ A	Maintain equipment in hazardous areas (Ex mixed)
UTE NES409^ A	Inspect visually existing hazardous area installations (Ex mixed)

Group 2 – all units to be completed

UTE NES107^ A	Install explosion-protected equipment & wiring systems (Ex mixed)
UTE NES214^ A	Maintain equipment in hazardous areas (Ex mixed)
UTE NES408^ A	Test installations in hazardous areas (Ex mixed)

Group 3 – all units to be completed

UTE NES012^ A	Attend to breakdowns in hazardous areas (Ex n)
UTE NES036 A	Use and maintain the integrity of portable gas detection devices
UTE NES107^ A	Install explosion-protected equipment & wiring systems (Ex mixed)
UTE NES125 A	Install and maintain integrity of fixed gas detection equipment
UTE NES408^ A	Test installations in hazardous areas (Ex mixed)

^ *Indicate Ex equipment endorsement*
END OF QUALIFICATION

Computer Systems Engineering - Diploma

National Qualification No	UTE 5 01 99
Qualification Specialisation	'As determined by the specialisation selected below with relevant information included in records and on reports and/or transcripts attached to the testamur'

Core Units - All to be completed

UTE NES303A A	Undertake commissioning procedures of apparatus and associated systems' circuits – *computer systems*
UTE NES404A A	Assess apparatus and associated systems' circuits – *computer systems*
UTE NES503A A	Diagnose and rectify faults in apparatus and associated systems' circuits - *computer systems*

Elective Units - One to be completed

UTE NES002 A	Attend to breakdown
UTE NES008 A	Provide technical leadership in the workplace
UTE NES009 A	Participate in the training of others
UTE NES601 A	Co-ordinate work of others

Optional Units
A further selection can be made by choosing one further unit if required

UTE NES604A A	Co-ordinate and manage commissioning processes – *computer systems*
UTE NES605A A	Co-ordinate and manage routine maintenance – *computer systems*
UTE NES606A A	Co-ordinate and manage installation projects – *computer systems*
UTE NES701A A	Redesign and develop modifications to apparatus and associated systems' circuits – *computer systems*

End of this qualification

Electrical Engineering - Diploma

National Qualification No	UTE 5 02 99
Qualification Specialisation	'As determined by the specialisation selected below with relevant information included in records and on reports and/or transcripts attached to the testamur'

Core Units - All to be completed

UTE NES303B A	Undertake commissioning procedures of apparatus and associated systems' circuits - *electrical*
UTE NES404B A	Assess apparatus and associated systems' circuits - *electrical*
UTE NES503B A	Diagnose and rectify faults in apparatus and associated systems' circuits - *electrical*

Elective Units - One to be completed

UTE NES002 A	Attend to breakdown
UTE NES008 A	Provide technical leadership in the workplace
UTE NES009 A	Participate in the training of others
UTE NES601 A	Co-ordinate work of others

Specialisation One to be selected	**Optional Units A further selection can be made by choosing one further unit per specialisation if required**	
Control Systems	UTE NES604B A	Co-ordinate and manage commissioning processes – *electrical*
	UTE NES605B A	Co-ordinate and manage routine maintenance – *electrical*
	UTE NES606B A	Co-ordinate and manage installation projects – *electrical*
	UTE NES701B A	Redesign and develop modifications to apparatus and associated systems' circuits – *electrical*
Drive Systems	UTE NES604B A	Co-ordinate and manage commissioning processes – *electrical*
	UTE NES605B A	Co-ordinate and manage routine maintenance – *electrical*
	UTE NES606B A	Co-ordinate and manage installation projects – *electrical*
	UTE NES701B A	Redesign and develop modifications to apparatus and associated systems' circuits – *electrical*

Continued

Specialisation **One to be selected**	**Optional Units** **A further selection can be made by choosing one further unit per specialisation if required**	
Hazardous Areas	UTE NES407^ A	Assess explosion-protected equipment for conformance with standards (^^)
	UTE NES604B A	Co-ordinate and manage commissioning processes – *electrical*
	UTE NES605B A	Co-ordinate and manage routine maintenance – *electrical*
	UTE NES606B A	Co-ordinate and manage installation projects – *electrical*
	UTE NES701B A	Redesign and develop modifications to apparatus and associated systems' circuits – *electrical*
	UTE NES705^ A	Design and develop modifications to explosive-protected equipment (^^)
Power Systems	UTE NES604B A	Co-ordinate and manage commissioning processes – *electrical*
	UTE NES605B A	Co-ordinate and manage routine maintenance – *electrical*
	UTE NES606B A	Co-ordinate and manage installation projects – *electrical*
	UTE NES701B A	Redesign and develop modifications to apparatus and associated systems' circuits – *electrical*
Renewable Energy	UTE NES604B A	Co-ordinate and manage commissioning processes – *electrical*
	UTE NES605B A	Co-ordinate and manage routine maintenance – *electrical*
	UTE NES606B A	Co-ordinate and manage installation projects – *electrical*
	UTE NES701B A	Redesign and develop modifications to apparatus and associated systems' circuits – *electrical*

^ *Endorsement to be reported,* unit number (qualifier)

^^ *Endorsement to be reported,* unit title (qualifier)

End of this qualification

Electronic Engineering - Diploma

National Qualification No	UTE 5 03 99
Qualification Specialisation	'As determined by the specialisation selected below with relevant information included in records and on reports and/or transcripts attached to the testamur'

Core Units - All to be completed

UTE NES303C A	Undertake commissioning procedures of apparatus and associated systems' circuits – *electronics*
UTE NES404C A	Assess apparatus and associated systems' circuits – *electronics*
UTE NES503C A	Diagnose and rectify faults in apparatus and associated systems' circuits - *electronics*

Elective Units - One to be completed

UTE NES002 A	Attend to breakdown
UTE NES008 A	Provide technical leadership in the workplace
UTE NES009 A	Participate in the training of others
UTE NES601 A	Co-ordinate work of others

Specialisation One to be selected	**Optional Units A further selection can be made by choosing one further unit per specialisation if required**	
Analogue and Digital	UTE NES604C A	Co-ordinate and manage commissioning processes – *electronics*
	UTE NES605C A	Co-ordinate and manage routine maintenance – *electronics*
	UTE NES606C A	Co-ordinate and manage installation projects – *electronics*
	UTE NES701C A	Redesign and develop modifications to apparatus and associated systems' circuits – *electronics*

Continued

Specialisation One to be selected	**Optional Units A further selection can be made by choosing one further unit per specialisation if required**	
Communication	UTE NES604C A	Co-ordinate and manage commissioning processes – *electronics*
	UTE NES605C A	Co-ordinate and manage routine maintenance – *electronics*
	UTE NES606C A	Co-ordinate and manage installation projects – *electronics*
	UTE NES701C A	Redesign and develop modifications to apparatus and associated systems' circuits – *electronics*
Medical Equipment	UTE NES604C A	Co-ordinate and manage commissioning processes – *electronics*
	UTE NES605C A	Co-ordinate and manage routine maintenance – *electronics*
	UTE NES606C A	Co-ordinate and manage installation projects – *electronics*
	UTE NES701C A	Redesign and develop modifications to apparatus and associated systems' circuits – *electronics*

End of this qualification

Instrumentation and Control Engineering – Diploma

National Qualification No	UTE 5 04 99
Qualification Specialisation	'As determined by the specialisation selected below with relevant information included in records and on reports and/or transcripts attached to the testamur'

Core Units - All to be completed

UTE NES303D A	Undertake commissioning procedures of apparatus and associated systems' circuits – *instrumentation*
UTE NES404D A	Assess apparatus and associated systems' circuits – *instrumentation*
UTE NES503D A	Diagnose and rectify faults in apparatus and associated systems' circuits – *instrumentation*

Elective Units - One to be completed

UTE NES002 A	Attend to breakdown
UTE NES008 A	Provide technical leadership in the workplace
UTE NES009 A	Participate in the training of others
UTE NES601 A	Co-ordinate work of others

Optional Units
A further selection can be made by choosing one further unit if required

UTE NES604D A	Co-ordinate and manage commissioning processes – *instrumentation*
UTE NES605D A	Co-ordinate and manage routine maintenance – *instrumentation*
UTE NES606D A	Co-ordinate and manage installation projects – *instrumentation*
UTE NES701D A	Redesign and develop modifications to apparatus and associated systems' circuits – *instrumentation*

End of this qualification

Refrigeration and Air Conditioning Engineering – Diploma

National Qualification No	UTE 5 05 99
Qualification Specialisation	'As determined by the specialisation selected below with relevant information included in records and on reports and/or transcripts attached to the testamur'

Core Units - All to be completed

UTE NES303E A	Undertake commissioning procedures of apparatus and associated systems' circuits – *refrigeration and air conditioning*
UTE NES404E A	Assess apparatus and associated systems' circuits – *refrigeration and air conditioning*
UTE NES503E A	Diagnose and rectify faults in apparatus and associated systems' circuits – *refrigeration and air conditioning*

Elective Units - One to be completed

UTE NES002 A	Attend to breakdown
UTE NES008 A	Provide technical leadership in the workplace
UTE NES009 A	Participate in the training of others
UTE NES601 A	Co-ordinate work of others

Specialisation One to be selected	**Optional Units A further selection can be made by choosing one further unit per specialisation if required**	
Control Systems	UTE NES604E A	Co-ordinate and manage commissioning processes - *refrigeration and air conditioning*
	UTE NES605E A	Co-ordinate and manage routine maintenance - *refrigeration and air conditioning*
	UTE NES606E A	Co-ordinate and manage installation projects - *refrigeration and air conditioning*
	UTE NES701E A	Redesign and develop modifications to apparatus and associated systems' circuits - *refrigeration and air conditioning*

Continued

Specialisation One to be selected	**Optional Units A further selection can be made by choosing one further unit per specialisation if required**	
Heating Ventilation and Air Conditioning Systems	UTE NES604E A	Co-ordinate and manage commissioning processes - *refrigeration and air conditioning*
	UTE NES605E A	Co-ordinate and manage routine maintenance - *refrigeration and air conditioning*
	UTE NES606E A	Co-ordinate and manage installation projects - *refrigeration and air conditioning*
	UTE NES701E A	Redesign and develop modifications to apparatus and associated systems' circuits - *refrigeration and air conditioning*
Refrigeration Systems	UTE NES604E A	Co-ordinate and manage commissioning processes - *refrigeration and air conditioning*
	UTE NES605E A	Co-ordinate and manage routine maintenance - *refrigeration and air conditioning*
	UTE NES606E A	Co-ordinate and manage installation projects - *refrigeration and air conditioning*
	UTE NES701E A	Redesign and develop modifications to apparatus and associated systems' circuits - *refrigeration and air conditioning*

End of this qualification

Electrotechnology Renewable Energy – Diploma

National Qualification No	UTE 5 06 01
Qualification Specialisation	'As determined by the specialisation selected below with relevant information included in records and on reports and/or transcripts attached to the testamur'

Core Units - All to be completed

UTE NES411 A	Assess renewable energy apparatus and systems
UTE NES709 A	Design a renewable energy system

Elective Units - One to be completed

UTE NES002 A	Attend to breakdown
UTE NES008 A	Provide technical leadership in the workplace
UTE NES009 A	Participate in the training of others
UTE NES601 A	Co-ordinate work of others

Specialisation
One to be selected

Energy Management Systems
Grid Connected Supplies
Energy Efficient Building Design

End of this qualification

Computer Systems Engineering – Advanced Diploma

National Qualification No	UTE 6 01 99
Qualification Specialisation	'As determined by the specialisation selected below with relevant information included in records and on reports and/or transcripts attached to the testamur'

Core Units - All to be completed

UTE NES304A A	Undertake commissioning of advanced systems and associated apparatus – *computer systems*
UTE NES406A A	Develop complex testing and evaluation procedures – *computer systems*
UTE NES504A A	Diagnose faults in advanced systems and associated apparatus - *computer systems*

Elective Units - One to be completed

UTE NES002 A	Attend to breakdown
UTE NES008 A	Provide technical leadership in the workplace
UTE NES009 A	Participate in the training of others
UTE NES601 A	Co-ordinate work of others

Optional Units
A further selection can be made by choosing one further unit if required

UTE NES602A A	Develop commissioning programs for apparatus and associated circuits – *computer systems*
UTE NES603A A	Develop maintenance programs for apparatus and associated circuits – *computer systems*
UTE NES702A A	Design electrical/electronic apparatus and systems – *computer systems*

End of this qualification

Electrical Engineering – Advanced Diploma

National Qualification No	UTE 6 02 99
Qualification Specialisation	'As determined by the specialisation selected below with relevant information included in records and on reports and/or transcripts attached to the testamur'

Core Units - All to be completed

UTE NES304B A	Undertake commissioning of advanced systems and associated apparatus - *electrical*
UTE NES406B A	Develop complex testing and evaluation procedures - *electrical*
UTE NES504B A	Diagnose faults in advanced systems and associated apparatus - *electrical*

Elective Units - One to be completed

UTE NES002 A	Attend to breakdown
UTE NES008 A	Provide technical leadership in the workplace
UTE NES009 A	Participate in the training of others
UTE NES601 A	Co-ordinate work of others

Optional Units
A further selection can be made by choosing one further unit if required

UTE NES602B A	Develop commissioning programs for apparatus and associated circuits - *electrical*
UTE NES603B A	Develop maintenance programs for apparatus and associated circuits - *electrical*
UTE NES702B A	Design electrical/electronic apparatus and systems - *electrical*

End of this qualification

Electronic Engineering – Advanced Diploma

National Qualification No	UTE 6 03 99
Qualification Specialisation	'As determined by the specialisation selected below with relevant information included in records and on reports and/or transcripts attached to the testamur'

Core Units - All to be completed

UTE NES304C A	Undertake commissioning of advanced systems and associated apparatus – *electronics*
UTE NES406C A	Develop complex testing and evaluation procedures - *electronics*
UTE NES504C A	Diagnose faults in advanced systems and associated apparatus- *electronics*

Elective Units - One to be completed

UTE NES002 A	Attend to breakdown
UTE NES008 A	Provide technical leadership in the workplace
UTE NES009 A	Participate in the training of others
UTE NES601 A	Co-ordinate work of others

Specialisation One to be selected	**Optional Units A further selection can be made by choosing one further unit per specialisation if required**	
Analogue and Digital	UTE NES602C A	Develop commissioning programs for apparatus and associated circuits – *electronics*
	UTE NES603C A	Develop maintenance programs for apparatus and associated circuits – *electronics*
	UTE NES702C A	Design electrical/electronic apparatus and systems – *electronics*

Continued

Specialisation **One to be selected**	**Optional Units** **A further selection can be made by choosing one further unit per specialisation if required**	
Communication	UTE NES602C A	Develop commissioning programs for apparatus and associated circuits – *electronics*
	UTE NES603C A	Develop maintenance programs for apparatus and associated circuits – *electronics*
	UTE NES702C A	Design electrical/electronic apparatus and systems – *electronics*
Medical Equipment	UTE NES602C A	Develop commissioning programs for apparatus and associated circuits – *electronics*
	UTE NES603C A	Develop maintenance programs for apparatus and associated circuits – *electronics*
	UTE NES702C A	Design electrical/electronic apparatus and systems – *electronics*

End of this qualification

Instrumentation and Control Engineering – Advanced Diploma

National Qualification No	UTE 6 04 99
Qualification Specialisation	'As determined by the specialisation selected below with relevant information included in records and on reports and/or transcripts attached to the testamur'

Core Units - All to be completed

UTE NES304D A	Undertake commissioning of advanced systems and associated apparatus - *instrumentation*
UTE NES406D A	Develop complex testing and evaluation procedures - *instrumentation*
UTE NES504D A	Diagnose faults in advanced systems and associated apparatus- *instrumentation*

Elective Units - One to be completed

UTE NES002 A	Attend to breakdown
UTE NES008 A	Provide technical leadership in the workplace
UTE NES009 A	Participate in the training of others
UTE NES601 A	Co-ordinate work of others

Optional Units
A further selection can be made by choosing one further unit if required

UTE NES602D A	Develop commissioning programs for apparatus and associated circuits - *instrumentation*
UTE NES603D A	Develop maintenance programs for apparatus and associated circuits – *instrumentation*
UTE NES702D A	Design electrical/electronic apparatus and systems – *instrumentation*

End of this qualification

Attachment A - Sample Training Agreement

Note: This attachment, forms part of part D – non-endorsed components and is included by EE-Oz Training Standards as advisory information only.

Special note: This model of a training agreement does not supersede training agreements used by State or Territory Authorities. Employers and practitioners should check with the Training Authority in their own State or Territory before considering the use of this model.

Special note: This model of a training agreement does not supersede training agreements used by State or Territory Authorities. Employers and practitioners should check with the Training Authority in their own State or Territory before considering the use of this model.

Sample training agreement

This agreement is a signed commitment between a Trainee/Apprentice and employee/employer for specific training within the Utilities or Electrotechnology industries. The training agreement is based on one *Qualification* being selected from the list contained in the National Utilities and Electrotechnology Industry Training Advisory Body's endorsed *National Electrotechnology Training Package*. The National Training Framework Committee, an endorsing body of the Australian National Training Authority (ANTA), has endorsed this National Training Package.

Terms of the training agreement

Within this agreement there are legal obligations to be fulfilled by both the employer and employee or Trainee/Apprentice. For the purpose of this agreement employee means Trainee/Apprentice.

Employer's obligations

The Employer shall:

I. take all reasonable steps to cause the Trainee/Apprentice to be instructed in workplace skills and knowledge (training) and in evaluation in accordance with the approved training program so that competence to the standard of performance required for the Qualification outlined in National Electrotechnology Training Package is achieved.

II. provide all necessary facilities, resources, equipment and training methods to ensure the Trainee/Apprentice receives appropriate practical training related to the on-the-job component of the training program.

III. meet all relevant costs associated with the on-the-job training component.

IV. take all reasonable steps to enable the Trainee/Apprentice to receive necessary supervision by a suitably qualified person while undergoing instruction and training in the workplace.

V. give the Trainee/Apprentice all reasonable opportunities to receive such other instruction or training as may be necessary to enable the Trainee/Apprentice to learn the skills and knowledge off-the-job as required by the training program at a location determined in consultation with a Registered Training Organisation (RTO).

Special note: This model of a training agreement does not supersede training agreements used by State or Territory Authorities. Employers and practitioners should check with the Training Authority in their own State or Territory before considering the use of this model.

VI. engage the services of a Registered Training Organisation to assist in monitoring the overall training for the purpose of issuing the relevant National Qualification. The Registered Training Organisation will deem the Trainee/Apprentice competent against the respective Unit(s) of competency.

VII. provide all necessary assistance to the Registered Training Organisation to meet quality assurance arrangements associated with the Registered Training Organisation to assist in determining and attributing competence. The required assistance may include evidence gathering relevant to the performance of the Trainee/Apprentice.

VIII. complete all forms and provide, where necessary, relevant information to the Registered Training Organisation, State/Territory Training Authority, Government Agencies/Authorities, Industrial Relations Authorities and any other relevant body for administering and monitoring the training.

IX. have in place an Occupational Health and Safety policy and take all reasonable steps to bring the policy and its respective obligations to the notice of the Trainee/Apprentice.

X. provide all necessary facilities to maintain training records of the Trainee/Apprentice, including progress and performance reports.

XI. assume responsibility for drafting the Training Agreement to ensure both the contract of employment and training program remain congruent and interrelated and that they meet the terms and conditions of relevant industrial instruments as defined by governing statutory requirements.

Obligations of the Trainee/Apprentice

The Trainee/Apprentice shall:

I. accept all instruction and training in the training program as specified in the schedule to this agreement so that competence is achieved in the skills and knowledge specified within the Unit(s) of competency in the Qualification.

II. make all reasonable efforts to acquire the skills and knowledge of the approved training program and maintain satisfactory progress.

III. make all reasonable efforts to maintain records of training undertaken for both on-and-off-the-job.

IV. make all reasonable efforts to behave in an acceptable manner while undertaking and completing the approved training program.

Special note: This model of a training agreement does not supersede training agreements used by State or Territory Authorities. Employers and practitioners should check with the Training Authority in their own State or Territory before considering the use of this model.

V. attend any required off-the-job training at an approved Registered Training Organisation at its nominated location.

VI. comply with the Employer's and Statutory Occupational Health and Safety requirements governing Trainees/Apprentices.

VII. complete relevant forms as required and provide necessary information to the Employer, Registered Training Organisation, State/Territory Training Authority, Government Agencies/Authorities, Industrial Relations Authorities and any other relevant body for administering and monitoring the training.

Period of training agreement

This Training Agreement commences and concludes on the dates specified respectively in the schedule to this agreement. Training continues until all the required Unit(s) of competency to the given qualification have been achieved or at the expiration of the agreement, whichever comes first. Judgment about the performance of the Trainee/Apprentice will be made by the Registered Training Organisation in accordance with statutory requirements for issuing the qualification and attributing competence in the respective Unit(s) of competency.

Changes to training agreement

Any changes to the training agreement shall be immediately notified by the employer to the Registered Training Organisation. The employer, where required and as necessary, shall notify the relevant Authorities such as a State/Territory Training Authority, Government Agencies/Authorities, Industrial Relations Authorities and any other relevant body of those changes.

The parties to this agreement may consent to vary the period of agreement by mutual consent. This shall be undertaken in consultation with the Registered Training Organisation and in accordance with the relevant requirements deemed by governing authorities.

Disputes related to training between the parties shall be resolved in accordance with provision 6 "Disputes Relating to Training" of this Agreement.

Period of probation

Traineeships and Apprenticeships may have provisions for a probationary period under relevant statutes and regulations. The statutory period of probation shall apply provided it does not exceed one month.

The Trainee/Apprentice may end this Training Agreement without prejudice during the probationary period.

Where a probationary period in excess of one month has been mutually agreed it shall be included in the schedule to this agreement.

Special note: This model of a training agreement does not supersede training agreements used by State or Territory Authorities. Employers and practitioners should check with the Training Authority in their own State or Territory before considering the use of this model.

Disputes relating to training

Where a dispute relating to training occurs, the Employer together with the Trainee/Apprentice shall take all reasonable steps to resolve the dispute in the first instance.

In the event where the dispute cannot be resolved, the Trainee/Apprentice or the Employer can seek the assistance of the Registered Training Organisation. Where there is no resolution the matter can be referred to the relevant Authority or Industry Training Advisory Body (ITAB).

Where a dispute in relation to the contract of employment occurs which pertains to training matters, the parties to this agreement shall make all reasonable effort and take all reasonable steps to resolve the matter in the first instance. If the dispute cannot be resolved by way of consultation with the Registered Training Organisation or other training bodies, the matter shall be referred to the relevant Authority or Industrial Relations Authority.

Unresolved disputes pertinent to the contract of employment shall be resolved in accordance with the statutory requirements prevailing at the time of the dispute.

Important note

The employment of the Trainee/Apprentice by the Employer is subject to the relevant legislation and any applicable industrial instrument, order or determination made under that related Statutory Act. Nothing in this Training Agreement affects the rights and duties of the parties under that Act or any industrial instrument, order or determination.

Signatories to the agreement

The parties to this agreement are those who have signed the schedule forming part of this agreement.

_____ *Schedule follows.* _____

Special note: This model of a training agreement does not supersede training agreements used by State or Territory Authorities. Employers and practitioners should check with the Training Authority in their own State or Territory before considering the use of this model.

Schedule

Schedule to draft training agreement

Training to be undertaken relevant to the National Qualification outlined in the National Utilities and Electrotechnology Industry Training Advisory Body National Electrotechnology Training Package.

Qualification title:

Training in the following Qualification Title is to be undertaken:

(enter qualification and specialisation, where appropriate)

Example:

Qualification: CIII in Electrotechnology Systems Electrician

Specialisation: Control

Enter in the space provided

Qualification _____

Specialisation if any _____

Unit(s) of competency:

The Unit(s) of competency that make-up the qualification and are attained by the Trainee/Apprentice are detailed in Annexure 1 under List of Unit(s) of Competency to be Attained. This has been compiled in accordance with the completion rules outlined in the National Electrotechnology Training Package for the Qualification after consultation between the Employer, Trainee/Apprentice and Registered Training Organisation.

Annexure 1 – List of Unit(s) of Competency to be attained, is attached to this agreement.

The Training program:

Consultation between the Registered Training Organisation, the Employer and Trainee/Apprentice has occurred and agreement reached on the Training Program designed by the Registered Training Organisation.

The Trainee/Apprentice shall undertake the training program in order to attain competence in the given qualification. The Training Program forms an Annexure to this Agreement – Annexure 2 – The Training Program.

Annexure 2 – The Training Program is attached to this agreement.

Special note: This model of a training agreement does not supersede training agreements used by State or Territory Authorities. Employers and practitioners should check with the Training Authority in their own State or Territory before considering the use of this model.

Trainee/Apprentice details:

Trainee/Apprentice Full Name _____

Family Name _____

Given Names _____

Gender: Male _____ Female _____

Date of Birth _____

Address _____

Town/Suburb _____ Post Code _____

Home Telephone Number _____

The Trainee/Apprentice must sign the agreement in the space provided below:

Signature _____ Date _____

Special note: This model of a training agreement does not supersede training agreements used by State or Territory Authorities. Employers and practitioners should check with the Training Authority in their own State or Territory before considering the use of this model.

Parent/Guardian details:

(required if the Trainee/Apprentice is under 18 years of age)

Parent/Guardian's Full Name _____

Family Name _____

Given Names _____

Address _____

Town/Suburb _____ Post Code _____

Daytime Telephone Number _____

The parent/guardian must sign the Declaration in the space provided below.

Signature _____ Date _____

Special note: This model of a training agreement does not supersede training agreements used by State or Territory Authorities. Employers and practitioners should check with the Training Authority in their own State or Territory before considering the use of this model.

Employer details

Legal name of employer (eg. name of company, partnership etc)

Business Name (if different to legal name)

Street Address

Town/Suburb Post Code

Postal Address

Town/Suburb Post Code

Name of contact person

Telephone Number

Fax. Number

Agreement dates

Commencement Date

Completion Date

In accordance with clause 3 - Period of Training Agreement. Applicable only when all the competencies making-up the Qualifications have not yet been achieved.

Period of probation

Parties to this Agreement agree that the term of the Probationary Period shall be as stated hereunder and the period does not exceed the requirements under statute, legislation, regulations, industrial instruments and the like:

Probation Period Month(s)

Special note: This model of a training agreement does not supersede training agreements used by State or Territory Authorities. Employers and practitioners should check with the Training Authority in their own State or Territory before considering the use of this model.

Agreement declaration

The Employer and the Trainee/Apprentice have read and understand the terms and conditions of the Training Agreement, its training requirements and respective obligations associated with the Trainee/Apprentice attaining the Unit(s) of competency that make up the National Qualification and any other relevant advice detailed in the Annexure 1 and 2 – *List of Competencies* and *Approved Training Program* respectively.

Trainee's/Apprentice's declaration

I have read, understand and agree to the conditions and terms of the approved training program that applies to this Training Agreement and forms Annexure 1.

I have read, understood and agree to the terms and conditions of this Agreement.

I understand that this Training Agreement is legally binding.

I declare that the information I have provided is complete, true and correct to the best of my knowledge and understanding.

I understand that the information may be used for statistical reporting, monitoring and evaluation purposes.

Signature of Trainee/Apprentice Date

Signature of Parent/Guardian
(if Trainee/Apprentice is under 18 years of age) Date

Special note: This model of a training agreement does not supersede training agreements used by State or Territory Authorities. Employers and practitioners should check with the Training Authority in their own State or Territory before considering the use of this model.

Employer's declaration

I have read, understand and agree to the Employer obligations and to the conditions and terms of the approved training program at Annexure 1 as it applies to this Training Agreement.

I have read, understood and agree to the terms and conditions of this Agreement.

I declare I have the capacity to train and ensure that appropriate training in conjunction with a relevant Registered Training Organisation shall be provided to the Trainee/Apprentice under this Training Agreement.

I understand that this Training Agreement is legally binding.

I declare that the information I have provided is complete and correct to the best of my knowledge and understanding.

Signature of Employer Date

* Where the employer is a company, the person signing must have authority to sign on behalf of the company.

National Utilities and Electrotechnology Industry Training Advisory Body Ltd Disclaimer:

As this is a sample Training Agreement nothing in this sample removes the onus on the parties to ensure all of the respective obligations and duties defined under legislation, regulations, governances, industrial instruments, and the like are met. The sample can be varied to meet the needs of the parties and any statutory or legislative requirements.

Special note: This model of a training agreement does not supersede training agreements used by State or Territory Authorities. Employers and practitioners should check with the Training Authority in their own State or Territory before considering the use of this model.

Annexure 1

List of Unit(s) of Competency to be attained

Trainee/Apprentice Name _____

Title of Qualification _____

Specialisation, where applicable _____

Title of National Training Package _____

National Training Package number _____

List of unit(s) of competency to be attained _____

Unit Number	Unit Title	Date Completed

Add attachment if additional units are to be included.

Special note: This model of a training agreement does not supersede training agreements used by State or Territory Authorities. Employers and practitioners should check with the Training Authority in their own State or Territory before considering the use of this model.

Parties

The parties to this Annexure have considered the Unit(s) which make up the National Qualification as defined in EE-Oz Training Standards' National Electrotechnology Training Package and have agreed in consultation with the Registered Training Organisation on the above list.

Employer		**Signature**
Organisation Name		
Officer Responsible		
Trainee/Apprentice		**Signature**
Name		
Registered Training Organisation		**Signature**
Organisation Name		
Officer Responsible		

Special note: This model of a training agreement does not supersede training agreements used by State or Territory Authorities. Employers and practitioners should check with the Training Authority in their own State or Territory before considering the use of this model.

Annexure 2

The training program

Trainee/Apprentice Name _____

Trainee/Apprentice ID Number _____

Title of Qualification _____

Training program

On-the-job skills development program

In an Attachment to this agreement provide a description of the process for undertaking training in the workplace, and the process for the collection and/or evaluation of naturally occurring evidence in the workplace. This should be developed in consultation with the Registered Training Organisation who should be involved in designing the program.

Expected duration of workplace program in hours

Also in the Attachment detail in the attachment the anticipated duration in hours that the Trainee/Apprentice is expected to undertake in order to gain the necessary competencies.

Off-the-job skills development program

In a further Attachment detail the off-the-job program that will be undertaken by the Trainee/Apprentice. For example where modules apply, list the number, title and duration of each module.

Expected duration of educational program in hours

In the Attachment detail the total duration of the off-the-job training program that the Trainee/Apprentice is expected to undertake in order to gain the necessary underpinning skills and knowledge.

Special note: This model of a training agreement does not supersede training agreements used by State or Territory Authorities. Employers and practitioners should check with the Training Authority in their own State or Territory before considering the use of this model.

Parties

The parties to this Annexure have considered the requirement for attaining the qualification and agreed on the appropriate approves Training Program for the Trainee/Apprentice.

Employer		**Signature**
Organisation Name		
Officer Responsible		
Trainee/Apprentice		**Signature**
Name		
Registered Training Organisation		**Signature**
Organisation Name		
Officer Responsible		