



Australian Government

Department of Education, Employment and Workplace Relations

UETDRIS81A Install telecommunications infrastructure on electricity supply industry assets

Release: 2

UETTDRIS81A Install telecommunications infrastructure on electricity supply industry assets

Modification History

Not Applicable

Unit Descriptor

Unit Descriptor

1)

1.1) Descriptor

This Competency Standard Unit covers the installation of telecommunications infrastructure equipment within the communications corridor, such as cables, cable support, termination enclosures, which are relevant to the transmission of data. It includes the termination/connection of the telecommunication equipment in accordance to enterprise requirements.

Application of the Unit

Application of the Unit 2)

This Competency Standard Unit is intended to augment formally acquired competencies. It is suitable for employment-based programs under an approved contract of training.

Licensing/Regulatory Information

License to practice

3)

The skills and knowledge described in this unit may require a licence/registration to practice in the work place subject to regulations for undertaking of telecommunication work. Practice in workplace and during training is also subject to regulations directly related to Occupational Health and Safety, electricity/telecommunications/gas/water industry safety and compliance, industrial relations, environmental

License to practice

3)

protection, anti discrimination and training.
Commonwealth, State/Territory or Local Government legislation and regulations may exist that limits the age of operating certain equipment.

Pre-Requisites

Prerequisite Unit(s)

4)

4.1) Competencies

Granting of competency in this unit shall be made only after competency in the following unit(s) has/have been confirmed.

Where pre-requisite pathways have been identified. All competencies in the Common Unit Group must be have been completed plus all the competencies in one (1) of the identified Pathway Unit Group(s):

Common Unit Group

Unit Code	Unit Title
UEENEEE101A	Apply Occupational Health and Safety regulations, codes and practices in the workplace
UEENEEE102A	Fabricate, assemble and dismantle utilities industry components
UEENEEE105A	Fix and secure electrotechnology equipment
UETTDREL14A	Working safe near live electrical apparatus as a non-electrical worker

Literacy and numeracy skills

4.2)

Participants are best equipped to achieve this unit if they have reading, writing and numeracy skills indicated by the following scales. Description of each scale is given in Volume 2, Part 3 “Literacy and Numeracy”

Reading 3 Writing 3 Numeracy 3

Employability Skills Information

Employability Skills 5)
The required outcomes described in this unit of competency contain applicable facets of Employability Skills. The Employability Skills Summary of the qualification in which this unit of competency is packaged will assist in identifying Employability Skill requirements.

Elements and Performance Criteria Pre-Content

6) Elements: Elements describe the essential outcomes of a unit of competency Performance Criteria describe the required performance needed to demonstrate achievement of the element. Assessment of performance is to be consistent with the evidence guide.

Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA
1 Prepare for the installation of telecommunications infrastructure equipment	1.1 Works schedule(s), including drawings, plans, requirements, established procedures, and material lists, are received.
	1.2 Relevant requirements and established procedures for the work are communicated to relevant personnel and identified for the work site.
	1.3 OHS policies and procedures related to requirements and established procedures for the installation of telecommunications infrastructure equipment are obtained and confirmed for the purposes of the work to be performed.
	1.4 Work is prioritised and sequenced following consultation with supervisor for completion within acceptable timeframes and in accordance with established procedures.

ELEMENT	PERFORMANCE CRITERIA
	1.5 Hazards are identified, OHS risks assessed and control measures are prioritised, implemented and monitored according to established procedures.
	1.6 Relevant work permits are received to access and perform work according to requirements and/or established procedures.
	1.7 Resources including equipment, tools and personal protective equipment required for the job are obtained and confirmed in working order.
	1.8 Relevant personnel at worksite are confirmed with currency in First Aid, Pole Top Rescue and other related work procedures according to requirements.
	1.9 Site is prepared in accordance with established procedures to minimise risk and damage to property, commerce, and individuals.
2 Carry out installation of telecommunications infrastructure equipment	2.1 OHS and sustainable energy principles and practices to reduce waste are monitored and followed in accordance with requirements and/or established procedures.
	2.2 Lifting, climbing, working at heights, and use of power tools/equipment, techniques and practices are safely followed.
	2.3 Essential knowledge and associated skills are applied to the safe installation of telecommunications infrastructure equipment to ensure completion in an agreed timeframe, to quality standards with a minimum of waste according to requirements.
	2.4 Telecommunications infrastructure equipment and associated hardware is positioned, secured and terminated/connected in accordance with requirements and established procedures.
	2.5 Telecommunications infrastructure equipment and associated hardware is maintained in accordance with requirements and established procedures.

ELEMENT	PERFORMANCE CRITERIA
	2.6 Unplanned events in the installation of telecommunications infrastructure equipment are resolved and dealt with.
	2.7 Known solutions to a variety of problems are applied using acquired essential knowledge and associated skills.
	2.8 Ongoing checks of quality of the work are undertaken in accordance with instructions and established procedures.
3 Complete the installation of telecommunications infrastructure equipment	3.1 Work undertaken is checked against works schedule for conformance with requirements and anomalies reported in accordance with established procedures.
	3.2 Accidents and/or injuries are reported in accordance with requirements/established procedures, where applicable.
	3.3 Work site is rehabilitated, cleaned up and made safe in accordance with established procedures.
	3.4 Tools, equipment and any surplus resources and materials are cleaned, checked and returned to storage in accordance with established procedures.
	3.5 Relevant work permit(s) are signed off.
	3.6 Works completion records, reports, as installed /modified drawing and/or documentation and information are finalised and processed and appropriate personnel notified.

Required Skills and Knowledge

REQUIRED SKILLS AND KNOWLEDGE

8) Essential Knowledge and Associated Skills (EKAS): This describes the essential skills and knowledge and their level, required for this unit.

Evidence shall show that knowledge has been acquired of installing telecommunications infrastructure equipment.

All knowledge and skills detailed in this unit should be contextualised to current industry practices and technologies.

KS01-TIS81A Telecommunication network installations

Evidence shall show an understanding of telecommunication network installations to an extent indicated by the following aspects:

T1 Telecommunication network drawings and plans

T2 OHS specific requirements for telecommunication networks encompassing:

- Aerial safety equipment
- Procedure to applying pole top rescue

T3 Hazard identification associated with telecommunication networks equipment encompassing:

- Working at height
- Checking exposed metal for potential differences
- Hazard and control measures in aerial cabling working environment
- Soundness of pole for aerial cabling
- Hazards associated with working with optical fibre.

T4 Aerial construction methods and regulations

T5 Telecommunication network cables encompassing:

- Types of cables
- Cable colour coding for outdoor cable
- Colour coding of cables and termination modules and standard connectors used with twisted pair, optical fibre and coaxial cables
- Cable labelling devices

T6 Cables protect and support requirements encompassing:

- protection against mechanical damage,
- protection from adverse temperatures and corrosion and
- protection from magnetic field that may affect the performance of the cable.
- Cable support and protection devices, accessories and typical applications (metallic and non-metallic conduits, duct and trunking, cable ladder and tray, cable clips and ties and related accessories).

T7 Installation techniques encompassing:

- Cable installation equipment
- Cable drawing and hauling techniques

T8 Insulation removal and replacement

REQUIRED SKILLS AND KNOWLEDGE

T9 Conductor handling and cable terminations encompassing:

- Application of connecting devices for conductors and terminals
- Stress release on cables/conductors.
- Methods of terminating cables (cables less than twenty pair, twenty pair cable and greater)
- Joining of an aerial cables

T10 Operating principles of fibre optic cable transmission encompassing:

- Types of optical fibre types available for telecommunications voice and data transmission.
- Difference between multimode and single mode transmission.
- Advantages of optical fibre cable compared to other cables.
- Applications of optical fibre cables.
- Requirements of optical fibre cables as specified in current Standards

T11 Installation techniques for optical fibre cables encompassing:

- Regulations, standards and codes applicable to optical fibre installation
- Bending radii and hauling requirements.
- Cable support and securing mechanisms
- Safety precautions.

Evidence Guide

EVIDENCE GUIDE

9) This provides essential advice for assessment of the unit of competency and must be read in conjunction with the Performance Criteria and the range statement of the unit of competency and the Training Package Assessment Guidelines.

The Evidence Guide forms an integral part of this Competency Standard Unit and shall be used in conjunction with all component parts of this unit and, performed in accordance with the Assessment Guidelines of this Training Package.

Overview of Assessment

9.1)

Longitudinal competency development approaches to assessment, such as Profiling, require data to be reliably gathered in a form that can be consistently interpreted over time. This approach is best utilised in Apprenticeship programs and reduces assessment intervention. It is the Industry's preferred model for apprenticeships. However, where summative (or final) assessment is used it 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,

EVIDENCE GUIDE

assessment in part or full can occur outside the workplace.

However, it must be in accord with Industry and, Regulatory policy in this regard.

Methods chosen for a particular assessment will be influenced by various factors. These include the extent of the assessment, the most effective locations for the assessment activities to take place, access to physical resources, additional safety measures that may be required and the critical nature of the competencies being assessed.

The critical safety nature of working with electricity, electrical equipment, gas or any other hazardous substance/material carries risk in deeming a person competent. Hence, sources of evidence need to be 'rich' in nature so as to minimise error in judgment. Activities associated with normal every day work have a bearing on the decision as to how much and how detailed the data gathered will contribute to its 'richness'. Some skills are more critical to safety and operational requirements while the same skills may be more or less frequently practiced. These points are raised for the assessors to consider when choosing an assessment method and developing assessment instruments. Sample assessment instruments are included for Assessors in the Assessment Guidelines of this Training Package.

Critical aspects of evidence required to demonstrate competency in this unit

9.2)

Before the critical aspects of evidence are considered all prerequisites shall be met.

Evidence for competence in this unit shall be considered holistically. Each element and associated Performance Criteria shall be demonstrated on at least two occasions in accordance with the "Assessment Guidelines – UET09". Evidence shall also comprise:

- A representative body of Performance Criteria demonstrated within the timeframes typically expected of the discipline, work function and industrial environment. In particular this shall incorporate evidence that shows a candidate is able to:
 - Implement Occupational Health and Safety workplace procedures and practices including the use of risk control measures as specified in the Performance Criteria and range; and
 - Apply sustainable energy principles and practices as specified in the Performance Criteria and range; and
 - Demonstrate an understanding of the essential knowledge and associated skills as described in this unit to such an

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extent that the learner's performance outcome is reported in accordance with the preferred approach; namely a percentile graded result, where required by the regulated environment; and

- Demonstrate an appropriate level of employability skills; and
- Conduct work observing the relevant Anti Discrimination legislation, regulations, policies and workplace procedures; and
- Demonstrated performance across a representative range of contexts from the prescribed items below:

Range of tools/equipment/materials/procedures/workplaces/other variables		
Group No	The minimum number of items on which skill is to be demonstrated	Item List
A	Any two of the following:	Cable support Support brackets Junction boxes Enclosures
B	Any two of the following:	Ribbon optical fibre cable Single mode optical fibre cable Multi mode optical fibre cable Structured aerial cabling
C	At least one occasion:	Dealing with an unplanned event by drawing on essential knowledge and associated skills to provide appropriate solutions incorporated in the holistic assessment with the above listed items.

EVIDENCE GUIDE

Context of and specific resources for assessment

9.3)

This unit should be assessed as it relates to normal work practice using procedures, information and resources typical of a workplace. This should include:

- OHS policy and work procedures and instructions.
- Suitable work environment, facilities, equipment and materials to undertake actual installation of telecommunications infrastructure equipment.

Method of assessment

9.4)

This Competency Standard Unit shall be assessed by methods given in Volume 1, Part 3 “Assessment Guidelines”.

Note:

Competent performance with inherent safe working practices is expected in the Industry to which this Competency Standard Unit applies. This requires that the specified essential knowledge and associated skills are assessed in a structured environment which is primarily intended for learning/assessment and incorporates all necessary equipment and facilities for learners to develop and demonstrate the essential knowledge and associated skills described in this unit.

Concurrent assessment and relationship with other units

9.5)

There are no concurrent assessment recommendations for this unit.

Range Statement

RANGE STATEMENT

10) This relates to the unit of competency as a whole providing the range of contexts and conditions to which the Performance Criteria apply. It allows for different work environments and situations that will affect performance.

This Competency Standard Unit shall be demonstrated in relation to the installation, termination/connection of overhead telecommunications infrastructure cabling and equipment relevant to the national broadband networks for the transmission and distribution of data.

Telecommunications infrastructure equipment and associated hardware may include relevant transmission or distribution cabling networks; cables, splices, lead-in cables, junction boxes, enclosures, cable support, support brackets.

The following constants and variables included in the element/Performance Criteria in this unit are fully described in the Definitions Section 1 of this volume and form an integral part of the Range Statement of this unit:

- Appropriate and relevant persons (see Personnel)
- Appropriate authorities
- Appropriate work platform
- Assessing risk
- Assessment
- Authorisation
- Documenting detail work events, record keeping and or storage of information
- Drawings and specifications
- Emergency
- Environmental and sustainable energy procedures
- Environmental legislation
- Established procedures
- Fall prevention
- Hazards
- Identifying hazards
- Legislation
- MSDS
- Notification
- OHS practices
- OHS issues
- Permits and/or permits to work
- Personnel

RANGE STATEMENT

- Quality assurance systems
- Requirements
- Work clearance systems

Unit Sector(s)

Not Applicable

2.2) Literacy and numeracy skills

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Participants are best equipped to achieve this unit if they have reading, writing and numeracy skills indicated by the following scales. Description of each scale is given in Volume 2, Part 3 "Literacy and Numeracy"

Reading	3	Writing	3	Numeracy	3
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Competency Field

Competency Field **11)**

Industry Specific Cross-Discipline Units