



Australian Government

Department of Education, Employment and Workplace Relations

UETDRVC21A Use climbing techniques to cut vegetation above ground near live electrical apparatus

Release: 1

UETTDRVC21A Use climbing techniques to cut vegetation above ground near live electrical apparatus

Modification History

Not applicable.

Unit Descriptor

Unit Descriptor

1) Scope:

1.1) Descriptor

This Competency Standard Unit covers cutting and/or pruning vegetation above ground level (using climbing techniques) and removal of vegetation obstructions, up to the climber exclusion zone as defined for both Authorised and Instructed Persons in the industry guidelines associated with live electrical apparatus, using the established cutting plan relevant to the vegetation type. It encompasses the safe use of appropriate/specialised tools and equipment according to requirements and established procedures. It includes the utilisation of climbing techniques in conjunction with aerial emergency rescue procedures and, inspection and preparation of climbing equipment with recommendations for corrective action being referred to appropriate authorities.

It includes safely accessing trees from above ground level to install restraints/slings, removing tree limbs in a safe manner and, clearing debris from the felling site to eliminate the occurrence of electrical incidents. It DOES NOT include entry of persons, mobile plant, equipment, and/or specialised tools into to the safe approach distance (SAD) as defined.

Also included is the preparation of risk assessment control measures that encompass job safety assessment. All work and zones are in compliance with relevant State or Territory regulatory agencies/bodies, local government legislation, industry bi-partite body – Guidelines/Codes of Practices or other related requirements for safe work and access near live electrical and mechanical apparatus.

Application of the Unit

Application of the Unit 2)

This unit shall apply to Transmission, Distribution, Rail Traction, Telecommunications and Vegetation Management Control industry sectors.

Licensing/Regulatory Information

License to practice 3)

The skills and knowledge described in this unit may only be practiced under the regulations pertaining to each State and Territory for the safe planning and removal of vegetation around live powerlines up to the live work zone including near live electrical apparatus, and regulations that directly relate to Occupational Health and Safety and/or contracts of training where they apply.

Pre-Requisites

Prerequisite Unit(s) 4)

Competencies 4.1)

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.

Common Unit Group

Unit Code	Unit Title
UEENEEE101A	Apply Occupational Health and Safety regulations, codes and practices in the workplace
UETTDREL13A	Comply with sustainability, environmental and incidental response policies and procedures

Prerequisite Unit(s)

4)

UETTDREL14A	Working safely as a non electrical worker near live electrical apparatus
UETTDRC23A	Plan the removal of vegetation up to vegetation exclusion zone near live electrical apparatus
UETTDRC27A	Monitor safety compliance for vegetation work near live electrical apparatus
UETTDRC33A	Apply pruning techniques to vegetation control near live electrical apparatus
UETTDRC34A	Undertake release and rescue from a tree near live electrical apparatus

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	2	Writing	2	Numeracy	2
---------	---	---------	---	----------	---

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 describe the essential outcomes of a competency standard unit
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 to cut/prune vegetation above ground (using climbing technique) up to the vegetation exclusion zone near live electrical apparatus.	1.1	Work instructions and cutting plan are received and confirmed.
		1.2	Relevant requirements and established procedures to be followed for the work to be performed in accord with the cutting are discussed with all personnel to establish and confirm the work schedule.
		1.3	OHS policies and procedures to be followed for the work to be performed are received and confirmed.
		1.4	Suggestions to assist and/or improve meeting the cutting of vegetation above ground level outside the climber exclusion zone near electrical apparatus outcomes are made to others involved in the work.
		1.5	Hazards are identified; OHS risks associated with working near live electrical apparatus are identified and reported according to established procedures.
		1.6	Scope of responsibility under the relevant work permit(s)/access authorisation(s) identified according to requirements and established procedures with relevant personnel.
		1.7	Resources including, equipment, tools, approved platforms and personal protective equipment required for the job are obtained and, in working order according to established procedures.

ELEMENT	PERFORMANCE CRITERIA
1.8	Relevant responsibility associated with First Aid, working aloft, and/or other related work safety procedures at the worksite are confirmed in accordance with requirements and established procedures to ensure safety measures are followed in the instance of an incident.
1.9	Client issues including environmental values are identified and referred to appropriate personnel in accordance with industry/acceptable /community standards.
1.10	Site is prepared to produce a quality outcome, follow sustainable energy principles and practices, and to minimise risk and damage to property, commerce, stock and individuals in accordance with established procedures.
1.11	Road signs, barriers and warning devices are obtained and positioned in accordance with given instructions and requirements.
1.12	Pre-operational checks are undertaken to confirm safe and correct operation of tools and equipment for safe use near live electrical apparatus according to requirements and established procedures.
1.13	Work permit(s)/access authorisation(s) are confirmed and received, where applicable, for commencement of the work according to requirements and established procedures with relevant personnel.
2 Carry out the cutting/pruning of vegetation above ground (using climbing technique) up to the vegetation exclusion zone near live electrical apparatus.	2.1
	OHS and sustainable energy principles and practices to reduce the incidents of accidents and minimise waste are followed in accordance with given instructions, requirements and/or established procedures.
	2.2
	Lifting, climbing, working aloft, and use of tools/equipment, techniques and practices are

ELEMENT	PERFORMANCE CRITERIA
	safely followed in accordance with given instructions and, according to requirements confirmed to eliminate the prospects of incidents.
	2.3 Operational knowledge for the cutting of vegetation above ground level outside the climber exclusion zone near electrical apparatus is confirmed to ensure completion in an agreed timeframe and, to quality standards with a minimum of waste according to requirements and established procedures.
	2.4 Cutting of vegetation above ground level outside the climber exclusion zone near electrical apparatus is carried out in accordance with the cutting plan and work schedule and, given instructions and established procedures.
	2.5 Hazard warnings and safety signs are recognised and hazards and assessed OHS risks are monitored and reported/referred to the immediate authorised personnel for directions according to established procedures.
	2.6 Non-routine events are referred to the immediate authorised personnel for directions according to established procedures.
	2.7 Problems associated with cutting vegetation above ground level outside of the vegetation exclusion zone near electrical apparatus are attended to using acquired known solutions and skills related to routine procedures to ensure work instructions and established procedures are met.
	2.8 Ongoing checks of quality of the work are undertaken in accordance with given instructions and established procedures.
3 Complete the cutting/pruning of vegetation above ground (using climbing technique) up to the vegetation	3.1 Work undertaken is checked against cutting plan and work schedule, work schedule and anomalies reported to Authorised personnel in accordance with established procedures.
	3.2 Accidents and/or incidents are actioned and

ELEMENT	PERFORMANCE CRITERIA
exclusion zone near live electrical apparatus.	reported to authorised personnel in accordance with established procedures.
	3.3 Work site is rehabilitated, cleaned-up, sustainable energy principles and practices applied, and made safe in accordance with given instructions and established procedures or an agreed standard.
	3.4 Tools, equipment and any surplus resources and materials are, where appropriate, cleaned, checked and returned to storage in accordance with established procedures.
	3.5 Appropriate personnel are notified of work completion according to established procedures.
	3.6 Post-operational checks, minor maintenance and/or relevant documentation of equipment and tools/platform are conducted according to requirements.
	3.7 Requirements for returning work permit(s) and/or access authorisation permits are confirmed, where applicable.
	3.8 Works completion records, report forms/data sheets are completed accurately in accordance with given instructions and established procedures.

Required Skills and Knowledge

REQUIRED SKILLS AND KNOWLEDGE

8) This describes the essential skills and knowledge and their level, required for this unit.

Evidence shall show that knowledge has been acquired of cutting vegetation above ground outside live work zone near live electrical apparatus (climbing).

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

KS01-TVC21A Power line vegetation control climbing techniques

Evidence shall show an understanding of climbing techniques to cut vegetation above ground and near live electrical apparatus to an extent indicated by the following aspects:

T1 Climbing techniques encompassing:

- Commonwealth, State and local government legislation, standards, codes, supply authority regulations and or enterprise requirements including relevant certification and licensing applicable to climbing for the purpose of vegetation control
- Vegetation that are and are not permissible to climb for vegetation control
- Safety precautions which are specific to tree climbing structures for the control of vegetation - safe working practices and procedures, Occupational Health and Safety hazards and precautions, identification of OHS hazards, assessment and control of OHS risks, types, selection, maintenance, storage and use of personal protective equipment including harnesses, dangers of climbing in confined spaces and at heights, permit to work systems and isolation procedures/protocols, safe working policies, procedures and practices when climbing, emergency response and rescue including First Aid etc.
- Techniques in safe methods of controlling the descent of vegetation in an electrical environment - safety procedures including safety ropes and lines, checking and setting up equipment, load calculations/estimations, techniques in using lowering equipment, determining the serviceability of ropes and other lowering devices.
- Load charts - safe working load estimates — field formulas, branch and trunk calculations, mathematical calculations and use of technology related to loads, slings, weights, and height
- Tree climbing and pruning practices - safe climbing with ropes and harnesses, methods of ensuring operation of safety lines and ropes, roping techniques, load bearing equipment and lifts, purposes of restraints, straps, slings, bends and hitches, purposes of pulleys, maillon rapides, lowering drum, T-bar flying capstan, techniques in climbing with spikes and pole belts.
- Role of safety observer and delimitation of fall and down zones.

T2 Enterprise specific vegetation control equipment encompassing:

- Types and application of vegetation cutting tools – chainsaws, , tool line, specialised pruning tools (cocky beaks and pruning saws)
- Purpose and use of cutting plans relevant to the vegetation type
- Cutting techniques of vegetation control tools and equipment

REQUIRED SKILLS AND KNOWLEDGE

- Techniques in undertaking different branch cuts - scarf under-cut, top cut technique, top scarf - bottom-back cut technique, side scarf opposite back-cut technique
- Pre-operational checks on vegetation control tools and equipment
- Techniques in safely using vegetation control equipment - visual inspection of vegetation control equipment, methods of using equipment at heights and in confined spaces, precautions to note during use of equipment (proximity of other personnel, proximity of powerlines and obstacles, and possible fire danger due to sparks)
- Types of personal protective equipment used in conjunction with vegetation control equipment - head protection, eye protection, hearing protection, hand protection, foot protection, body protection, general protection.
- Basic maintenance of vegetation control equipment - cleaning, proper storage, basic repair and replacement and testing for compliance to manufacturer's and OHS requirements.

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, 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 – UET12". 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 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	Confirm operational knowledge associated with the cutting vegetation above ground outside Live Work Zone near live electrical apparatus in all of the following:	Principles of electricity, the three phase power system. Power system. Recognition of aerial voltage systems. Identification of Low Voltage Aerial Circuits. Identification of High Voltage Aerial Circuits. "Safe working zone" and "Ordinary person zone" so defined by relevant authorities. Use of technical standards, acts, regulations, codes /guidelines and established/enterprise/asset owner's procedures. System Control - Information required and function. Vicinity Permit - Information required and function. Sensitive Earth Fault

		(SEF) System Confirm environmental principals and procedures
B	Confirm safe practices associated with the cutting vegetation above ground outside Live Work Zone near live electrical apparatus in all of the following:	OHS safety practices and procedures. Electric shock and resuscitation. Release and rescue Role of the Safety Observer Events constituting an incident. Procedures in the event of/responding to, incidents. Methods of identifying hazards. Risk assessment procedures for both worksite and pre-job checklist. Selection of the best position for monitoring and controlling work (cutting) Selection of correct line of site to the cutter Correct observation of the work from ground level Constant analysis and decision making relevant to the safety of the work, taking into account prevailing site conditions (lay of the land) and on-going weather conditions.
C	Confirm vegetation control associated with the cutting vegetation above ground outside Live Work Zone near live electrical apparatus	Identify tree types Confirm vegetation species and types Confirm vegetation cutting techniques for different vegetation Confirm appropriate

	in all of the following:	vegetation machinery and equipment to be used Use of feeder route plans
D	Confirm the safe cutting of vegetation above ground outside Live Work Zone near live electrical apparatus in all of the following:	Use of cutting plans relevant to the vegetation type. Safe use of all relevant personnel protective equipment Safe rigging and climbing procedures and techniques Safe operation of restraints, slings, lifting and loads Safe use of tools and equipment such as hand saws, chainsaws, specialised tools and equipment and or power pruners above ground. Safe use of chemical control and application above ground. Safe cutting, pruning and tree trimming techniques above ground near electrical apparatus Conduction of pre and post operational checks, inspection and minor maintenance. Safe deployment of equipment and tools in varying ground conditions and weather. Safe debris removal
E	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.
--	--	--

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 safely undertake actual cutting/pruning of vegetation above ground up to the vegetation exclusion zone near live electrical apparatus using the climbing technique.

In addition to the resources listed above, in Context of and specific resources for assessment, evidence should show demonstrated competency working below ground, in limited spaces, with different structural/construction types and method and in a variety of environments.

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 Transmission, Distribution and Rail Traction Industry. 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)

RTF2027A

Undertake standard climbing techniques

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 cutting and/or pruning vegetation above ground level (using climbing technique) and removal of vegetation obstructions up to the climber exclusion zone as defined for both Authorised and Instructed Persons in the industry guidelines associated with live electrical apparatus.

Utilisation of climbing techniques in conjunction with aerial emergency rescue procedures and, inspection and preparation of climbing equipment with recommendations for corrective action being referred to appropriate authorities

Aerial work is conducted using regulator and/or industry approved climbing technique and includes height fall protection emergency rescue near live electrical apparatus

Use of established cutting plan(s) relevant to the vegetation type

Safety practices include: the safe use of appropriate/specialised tools and equipment, the safe use of vegetation climbing equipment and techniques and may include safely accessing trees to install restraints/slides, removing tree limbs in a safe manner, clearing debris from the felling site to eliminate the occurrence of electrical incidents and reparation of risk assessment control measures that encompass job safety assessment. It also includes working safely up to the defined “ordinary person zone” near energised electrical apparatus (inc. electrical powerlines) for non-electrical worker/ordinary persons and risk assessment control measures that encompass job safety assessment.

Excludes entry of persons, mobile plant, equipment, and/or specialised tools into to the safe approach distance (SAD) as defined.

Work and zones is in compliance with relevant State or Territory regulatory agencies/bodies, local government legislation, Industry bi-partite body–

Guidelines/Codes of Practices or other related requirements for safe work and access near live electrical and mechanical Apparatus

Excludes any work that is or may be performed by other competent operatives within the defined “live work zone”

Electricity supply infrastructure assets condition – sagging, swaying, ties, cross arms, poles, insulators, conductors, service wires, electrical apparatus/equipment, etc.

Safe approach distances zones/Safe Working Clearance

Other areas which may need to be taken into consideration are: work permit(s) and/or access authorisation permits, technical standards and Industry Guidelines, rural applications, inclement weather, ground configuration and access – undulations, uneven ground, soft ground, damp, road construction, pavements, etc, feeder route plans and the use of technology and mathematical calculations

Equipment and specialised tools for use in electrical environments and loading and slinging techniques

Vegetation control includes: site rehabilitation, horticultural vegetation cutting and pruning techniques to minimise regrowth - chemicals and physical cutting and pruning tools/equipment, concerns for vegetation type/species and significance – heritage,

RANGE STATEMENT

significant, urban/rural; vegetation fire prone areas and areas of particular significance.

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
- Inspect
- Legislation
- MSDS
- Notification
- OHS practices
- OHS issues
- Permits and/or permits to work
- Personnel
- Quality assurance systems
- Requirements
- Work clearance systems

Unit Sector(s)

Not applicable.

Competency Field

Competency Field 11)

Vegetation Units