Australian Government

Department of Education, Employment and Workplace Relations

UETTDRIS65A Contribute to coordinated HV live working

Release: 1

UETTDRIS65A Contribute to coordinated HV live working

Modification History

Not applicable.

Unit Descriptor

Unit Descriptor **1) Scope:**

1.1) Descriptor

This Competency Standard Unit specifies the outcomes required of live line working team members to work effectively as a cohesive team to ensure safety of all team members and the community when undertaking high voltage (HV) live line work. It includes the pre-work briefing on tasks to be undertaken, roles of individual team members, identification of possible hazards, risk management analysis and implementation of palliative measures to control or mitigate the risk to acceptable levels. It also encompasses the monitoring of work performance to ensure safety, and the post-work debriefing to identify areas for continuous improvement.

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 electrical work.

License to practice **3)**

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 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)**

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 plus all the competencies in one (1) of the identified Pathway Unit Group(s):

There are no prerequisite competencies to this unit.

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

Employability Skills	**5)** 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 Plan to contribute to a coordinated High Voltage Live Line work team.	1.1 Works schedule(s), including drawings, plans, requirements, established procedures, and material lists, are obtained, analysed, if necessary, by site inspection and the extent of the preparation of the work determined for planning and coordination by the team.
	1.2 Relevant requirements and established procedures for the work are communicated to all team members and identified for all work sites.
	1.3 OHS policies and procedures related to requirements and established procedures for the working on HV live lines are obtained and confirmed for the purposes of the work to be performed and discussed among all team members.
	1.4 Work is prioritised and sequenced following consultation with all team members to ensure safe systems of work are followed for completion within acceptable timeframes and in accordance with established procedures.
	1.5 OHS and live line work hazards are identified, risk assessments conducted and control measures

ELEMENT	PERFORMANCE CRITERIA
	are identified, prioritised, implemented and documented against the work schedule, including the checking of site weather and environmental conditions to ensure that live line work can be undertaken safely.
	1.6 Relevant live line work permits or authority for live line work are secured to coordinate the performance of work by the team according to requirements and/or established procedures.
	1.7 Resources including personnel, equipment, tools and personal protective equipment required for the job are identified, scheduled and coordinated and confirmed in a safe and technical working order.
	1.8 Personnel participating in the work, including plant operators and contractors, are fully briefed and respective responsibilities coordinated and authorised where applicable in accordance with established procedures.
	1.9 Liaison and communication issues with other/authorised personnel, authorities, clients and land owners are resolved and activities coordinated to carry out work.
	1.10 Site is prepared according to the work schedule and to minimise risk and damage to property, commerce, and individuals in accordance with established procedures.
	1.11 All team members to be engaged in the work discuss and agree, without ambiguity, on their respective roles, and possible role changes during the course of work.
	1.12 Positioning of road signs, barriers and warning devices is planned and coordinated in accordance with requirements.

ELEMENT	PERFORMANCE CRITERIA	
2 Carry out the contribution to coordinated High Voltage Live Line work.	2.1	OHS and sustainable energy principles and practices to reduce the incidents of accidents and minimise waste are monitored and actioned in accordance with requirements and/or established procedures. In particular, established live line working procedures are strictly adhered to.
	2.2	First Aid, Rescue and other related work procedures are performed according to requirements and/or established procedures
	2.3	Lifting, climbing, working aloft, and use of power tools/equipment, techniques and practices, where applicable are safely exercised according to requirements.
	2.4	Live line permits and other provisions for live line work are in place as required, in accordance with the requirements and established procedures.
	2.5	Essential knowledge and associated skills are applied in the safe contribution to coordinated High Voltage Live Line work to ensure completion in an agreed timeframe and, to quality standards with a minimum of waste according to requirements.
	2.6	Work is undertaken on HV Live Line in a team environment work according to the work schedule and requirements/established procedures.
	2.7	Work is shared among all team members in a coordinated manner as discussed and agreed during pre-work briefing.
	2.8	Hazard warnings and safety signs are recognised and hazards and assessed OHS risks are discussed with team members and reported to the immediate authorised persons for directions according to established procedures.
	2.9	Unplanned events in the maintenance of HV Live Line work are discussed among all team members and appropriate action undertaken accordingly.
	2.10	Solutions to non-routine problems are identified

ELEMENT	PERFORMANCE CRITERIA	
		and actioned using acquired essential knowledge and associated skills according to requirements.
	2.11	Ongoing checks of quality of the work are undertaken in accordance with requirements and established procedures to ensure a quality like outcome is achieved for the client/customer and to a community/industry standard.
3 Complete the contribution to coordinated High Voltage Live Line work.	3.1	Work undertaken is checked against works schedule for conformance with requirements, anomalies reported and solutions identified in accordance with established procedures.
	3.2	Accidents and/or injuries are reported and followed up in accordance with requirements/established procedures.
	3.3	Work site is rehabilitated, cleaned up and confirmed safe in accordance with established procedures.
	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	Relevant work permit(s) are signed off and, High Voltage Live Line work is returned to service and advised to client/customer in accordance with requirements.
	3.6	Works completion records, reports, as installed /modified drawing(s) and/or documentation and information are confirmed, processed and appropriate personnel notified.
	3.7	Aspects of work schedule are discussed identified via feedback with fellow team members and information on improvement forwarded to appropriate personnel according to established procedures.

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 contributing to coordinated high voltage live line work.

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

KS01-TIS65A HV live working coordination

Evidence shall show an understanding of coordination role when working live on HV infrastructure to an extent indicated by the following aspects:

T1 Electrical safe working practices encompassing:

- Risk management and assessment of risk - principle and purpose of risk management, processes for conducting a risk assessment
- Hazards associated with low-voltage, extra-low voltage and high-currents - arrangement of power distribution and circuits in an electrical installations, parts of an electrical system and equipment that operate at low-voltage and extra-low voltage, parts of an electrical system and equipment where high-currents are likely.
- Risks and control measures associated with high-voltage - parts of an electrical system and equipment that operate at high-voltage, the terms ‘touch voltage’, ‘step voltage’, ‘induced voltage’ and ‘creepage’ as they relate to the hazards of high-voltage, control measures used for dealing with the hazards of high-voltage
- Optical fibre safety - coherent optical sources and joining procedures, laser safety class 3a devices or their replacement
- Risks and control measures associated with low voltage - risks associated with modifying electrical installations, fault finding, maintenance and repair, control measures before, while and after working on electrical installations, circuits or equipment, isolation and tagging-off procedures, risks and restrictions in working live, control measures for working live
- Risks and control measures associated with harmful dusts and airborne contaminants - thermal insulation, fibrous cement materials and asbestos and other fibre reinforced switchboard materials.
- Safety, selection, use, maintenance and care of test equipment - safety characteristics of electrical testing devices, safe use of electrical testing device, checks and storage methods for maintaining the safety of testing devices

T2 Powerline safety practices encompassing:

- Protective apparatus and apparel for linework - responsibilities for the selection, use, maintenance and storage of protective apparatus and apparel and the types of protective apparatus and apparel used for the line worker
- Requirements for the use of ladders - carrying, erecting, collapsing and lowering different types of extension ladder against a standing pole, maintenance checks on

REQUIRED SKILLS AND KNOWLEDGE

different types of ladders, renewal of extension ropes and the safety issues relating to clearances from overhead conductors

- Requirements for climbing and working aloft - methods used to identify a pole is safe to climb, methods used to inspect a line worker's body belt, application of knots and hitches appropriate to the requirements of a line worker, height safety principles including personal fall protection, prevention and related requirements, and the practical procedure of climbing an overhead structure and fitting a pole chair
- Traffic management - purpose of traffic management and a line worker's responsibilities in accordance with relevant statutory requirements and electricity supply industry requirements, demonstration of the procedure used to provide an effective traffic management scheme and the use of a two-way radio
- Control of small fires - identification, selection and operation of the appropriate extinguishing mediums for various types of fires, general fire prevention methods and the precautions for personal protection when fighting small fires
- Rescue victims from heights and confined spaces - planning, identifying, the procedures, and establishing responses, developing techniques, involvement of external emergency services and practical demonstration/rehearsals of rescuing a person from heights and from confined spaces and emergency procedures for the rescue of an electric shock victim including CPR
- Requirements for aerial linework - planning, establishing and implementing relevant aviation authority clearances, determining system requirements, aircrew familiarisation with network operations and equipment, requirements for effective communications operations for aerial work.

T3 Principles of Statutory and safety considerations encompassing:

- Commonwealth/State/Territory legislation, standards, codes, supply authority regulations and or enterprise requirements associated with working on High Voltage
- Particular reference to State and Territory regulations regarding working near energised conductors, electrical access, heights, confined space, testing procedures and licensing rules.

T4 Working safely up to the defined "safe working zone" near energised electrical apparatus (inc. electrical powerlines) for non-electrical worker encompassing:

- Standards, guidelines/codes of practice, State/Territory/local government legislation, supply authority regulations and or enterprise requirements including relevant certification and licensing, applicable to working safely up to the defined "safe working zone" near energised electrical apparatus (inc. electrical powerlines) for non-electrical worker
- Definitions of terminologies - 'safe working zone' 'risk assessment', 'safe approach distances zones', 'safe working distances'.' work permits', access authorisation permits', 'Technical standards' 'isolation procedures' and compliance requirements'
- OHS policies and procedures for working safely - emergency response and First

REQUIRED SKILLS AND KNOWLEDGE

Aid procedures such as CPR, roles and responsibilities of employers, employees and other parties under OHS legislation, personal protective equipment, identifying hazards, assessing and controlling OHS risks, first aid procedures, duties of a safety observer, working at heights/confined spaces, permit to work systems and isolation procedures.

- Safe application of different types of tools and equipment
- Operation of mobile plant and machinery (e.g. EWP) near live electrical apparatus
- Electricity supply infrastructure assets and voltages
- Techniques and precautions in undertaking different work functions and working safely up to the defined "safe working zone" near energised electrical apparatus (inc. electrical powerlines) for non-electrical worker - work functions that may be performed include, vegetation control, scaffolding, rigging, painting, and/or any other activity that requires working safely near live electrical apparatus by a non-electrical worker.

T5 Enterprise specific — policy and procedure instructions encompassing:

- Responsibilities and duty of care of employer and employee relationship
- Methods of obtaining the up-to-date information on enterprise policy and procedures
- Rules and regulations
- Induction into workplace - location of work area and storage area, timetable, uniform, personal well-being, housekeeping rules, emergency procedures, evacuation procedures
- Techniques when deal with others - working in teams, customer relation, complaint and issues procedures.
- Overview of enterprise professional development - fire fighting procedures, fatigue management, training and competency development - understanding and promotion

T6 Enterprises specific — OHS instructions encompassing:

- Standards, codes, legislation, supply authority regulations and specific enterprise regulations pertaining to the OHS policies and procedures
- Methods of obtaining the up-to-date information on enterprise OHS policy and procedures
- Specific enterprise personal protection equipment - type and application, where and when to be used, method of replacement, responsibility of maintenance including cleaning inspection and testing, emergency response, rescue, evacuation and First Aid procedures
- Personal well-being – hygiene, fatigue/stress management, drugs/alcohol
- OHS training - induction training, specific hazard training, specific task or equipment training, emergency and evacuation training, training as part of broader programs such as equipment operation
- OHS records including audits, inspection reports, workplace health and environmental monitoring records, training and instruction records, manufacturers and suppliers information such as MSDSs, registers, maintenance reports, workers

REQUIRED SKILLS AND KNOWLEDGE

compensation and rehabilitation records and First Aid/medical records

T7 Enterprises specific specialised tools encompassing:

- Legislation, Standards, codes, legislation, supply authority regulations and specific enterprise regulations pertaining to the use and care of specialised tools - voltage detectors; polarity testers, phase rotation.
- Characteristics, capabilities and application of specialised tools for a particular job
- Safety policies, procedures and precautions with regards to using, transporting and storage of specialised tools
- Selection methods for obtaining the correct specialised tool for the particular job including during procurement, purchasing and or hiring arrangements
- Techniques in pre-use inspection on the serviceability of specialised tools
- Techniques in the selection, use, maintenance, and care and storage of specialised tools
- Identifying OHS hazards, assessing and controlling risks associated with their use
- Techniques for the safe use of specialised power tools

T8 Enterprise specific — teamwork high voltage live line encompassing:

- Commonwealth/State/Territory legislation, Standards, codes, supply authority regulations and or enterprise requirements associated with working on high voltage live lines
- Safety precautions working on energised live lines when working in teams - live line minimum approach distances for person and plant, Occupational Health and Safety hazards and precautions, identification of OHS hazards, assessing and controlling risks, types, selection, maintenance, storage and uses of personnel protective equipment, live line access authority/permit system, disabling auto-reclosing function, ensuring functioning of fault current protective devices, checking integrity of insulation prior to work commencement.
- Types and function of specialised live line working equipment and tools inspection prior to use
- Safe working policies, procedures and practices when using and operating specialised equipment and tools
- Methods of using specialised equipment and tools
- Use of safety observers
- Emergency response and rescue including First Aid etc
- Relationship and responsibilities of each team member - roles of individuals in the team, contribution to joint outcome, goals/plans and objectives of the team.
- Work team communication - techniques in effective communication, techniques in effective teamwork, dangers of ineffective teamwork.

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**	**Item List**

	demonstrated	
A	All of the following:	Facilitate communication/consultation process in a HV live line work team environment. Contribute to pre-work briefings and securing of live line permits or authority to work in a HV live line work team environment. Implement OHS policies and procedures in a HV live line work team environment. Contribute to the work schedule in a HV live line work team environment. Contribute to feedback consultation on improving safe working in a HV live line work team environment.
B	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 undertake actual HV Live Line work as a team.

In addition to the resources listed above, in Context of and specific resources for assessment, evidence should show demonstrated competency working at realistic heights above ground i.e. above 3 metres, 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 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)**

For optimisation of training and assessment effort, competence in this unit may be assessed concurrently with the following units:

UETTDRDP14A	Maintain energised HV distribution overhead electrical apparatus (glove)
UETTDRRT33A	Maintain energised traction overhead electrical apparatus using glove 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 contributing to coordinated high voltage live line work and may include the following:

This is a common unit for all developed live line working techniques such as hot stick, gloves and barrier, or bare hand. Technical details utilising these live line techniques are covered in other respective units of competency for live line work.

HV Live Line work may include the maintenance of energised HV electrical apparatus, conductors and cables.

Work may be undertaken on ladders, insulated elevating work platforms or through the use of a work platform secured to a helicopter.

The emphasis of this unit is to foster and promote effective team work live line work to ensure safety of all team members and the community during the course of work.

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
- Diagnostic, testing and restoration
- Documenting detail work events, record keeping and or storage of information
- Drawings and specifications
- Emergency
- Environmental and sustainable energy procedures
- Environmental legislation
- Environmental management documentation
- Established procedures
- Fall prevention
- Hazards
- Identifying hazards
- Inspect
- Legislation

RANGE STATEMENT

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

Unit Sector(s)

Not applicable.

Competency Field

Competency Field **11)**

Industry Specific Cross-Discipline Units