



Australian Government

Assessment Requirements for UETTDREL14 Working safely near live electrical apparatus as a non-electrical worker

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Modification History

Release 1. This is the first release of this unit of competency in the UET Transmission, Distribution and Rail Sector Training Package.

Performance Evidence

Evidence required to demonstrate competence in this unit must be relevant to and satisfy all of the requirements of the elements and performance criteria on at least two separate occasions and include:

- applying relevant work health and safety (WHS)/occupational health and safety (OHS) requirements, including the use of risk control measures
- applying sustainable energy principles and practices
- completing all of the following:
 - confirming the safe working zone for safe work and access near live electrical apparatus
 - identifying relevant technical standards, acts, regulations and codes/guidelines
 - identifying established (enterprise) procedures
- completing all of the following:
 - confirming the principles of electricity, the three phase power system, electric shock and resuscitation, and power system
 - recognising aerial voltage systems
 - identifying low voltage (LV) aerial circuits
 - identifying high voltage (HV)
- identifying all of the following:
 - procedures in the event of an incident
 - events constituting an incident
 - procedures for responding to incidents
 - hazard and risk assessment procedure
 - conduct worksite hazard assessment
 - confirmation of essential components of hazard assessment checks
 - applying hazard identification in electrical work
 - confirmation of the basic safety principles for work on electrical works
 - hazard identification and risk assessment
 - hazard control
 - risk assessment and management (job safety analysis (JSA)) control
 - the hierarchy of controls, including evaluation, worksite hazard and risk assessment checklist, pre-job hazard assessment check (HAC) items, planned inspection and

- pre-work hazard risk assessment form
- identifying all of the following:
 - use of work permits and/or authorisation permits
 - sustainable energy principles and practices
 - possible effects of weather conditions on working near electrical apparatus as a non-electrical worker
- dealing with unplanned events on at least one (1) occasion.

Knowledge Evidence

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

- basic electrical principles encompassing:
 - fundamental units - basic measurement of units
 - electrical characteristics of material - characteristics of solid materials; insulators; and terms electrical charge, electrical current and electromagnetic forces
 - nature of electrical current and change - basic rules of electrical current flow
 - sources of electricity - basic fundamentals of alternating current (a.c.), direct current (d.c.) and single electromagnetic field source (induction)
 - simple circuits - circuit protection devices used on the network; effects of an open circuit, a closed circuit and a short circuit and earthing – using the ground as a form of conductor to return current back to a source
 - resistance - relationship between voltage and current and resistance (Ohms Law)
 - effects of current - physiological effects and protection for physiological effects; basic principle by which electrical current can result in the production of heat, light and electromagnetic fields and typical effects of current
 - three phase and single-phase power systems - star delta configurations, three phase star connections, relationship between line and phase voltages, three phase 4 wire systems - purpose of the neutral
 - consequences of short circuits - arc flash, electricity supply industry (ESI) protection schemes
 - magnetism - magnetic field patterns, concepts of electromagnetism, effects of electromagnetism and magnetic fields around straight conductors
 - hazards encountered in an ESI environment - touch and step potentials, electric shock, fire, chemicals, falls and safe use of tools and equipment
- transmission, distribution and rail power systems encompassing:
 - relationship between the transmission, distribution and rail/tram system within an overall power system - different organisations responsible for generation, transmission, distribution and rail/tram; how they correlate and their functions
 - characteristics of a transmission, distribution and rail system - principal components; typical voltage levels and methods of transmission and distribution, including grid type transmission systems, radial, parallel and ring main feeders
 - relationship between an overhead and underground supply systems within an overall

power system - advantages/disadvantages and applications

- single line drawings and layouts - drawings and layouts of transmission and distribution systems, including radial, parallel and ring main feeders and the HV equipment associated with substations
- fundamentals for working safely near live electrical apparatus for non-electrical worker encompassing:
 - standards, guidelines/codes of practice, Commonwealth/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, including electrical powerlines, for non-electrical worker
 - definitions of terminologies - 'safe working zone', 'risk assessment', 'safe approach distances (SAD) zones', 'safe working distances', 'work permits', 'access authorisation permits', 'technical standards', 'isolation procedures' and 'compliance requirements'
 - WHS/OHS policies and procedures for working safely - duties of a safety observer, permit to work systems and isolation procedures, safe application of different types of tools and equipment and operation of mobile plant and machinery (e.g. elevated work platform (EWP)) near live electrical apparatus
 - techniques and precautions in undertaking different work functions and working safely up to the defined safe working zone near energised electrical apparatus (including 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).

Assessment Conditions

Assessors must hold credentials specified within the Standards for Registered Training Organisations current at the time of assessment.

Assessment must satisfy the Principles of Assessment and Rules of Evidence and all regulatory requirements included within the Standards for Registered Training Organisations current at the time of assessment.

Assessment must occur in workplace operational situations where it is appropriate to do so; where this is not appropriate, assessment must occur in simulated conditions involving realistic and authentic activities that replicate operational workplace conditions.

Assessment processes and techniques must be appropriate to the language, literacy and numeracy requirements of the work being performed and the needs of the candidate.

Resources for assessment must include access to:

- a range of relevant exercises, case studies and/or other simulations
- relevant and appropriate materials, tools, equipment and personal protective equipment (PPE) currently used in industry
- applicable documentation, including workplace procedures, equipment specifications, regulations, codes of practice and operation manuals.

Links

UET Training Package Companion Volume Implementation Guide is found in VETNet - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=229bace1-b7bc-4653-9300-dffb13ecfad7>