



Australian Government

UEEEL0051 Investigate and report on electrical incidents and causes

Release: 2

UEEEL0051 Investigate and report on electrical incidents and causes

Modification History

Release 2. Minor Change. Typographic error in prerequisites corrected.

Release 1. This is the first release of this unit of competency in the UEE Electrotechnology Training Package.

Application

This unit involves the skills and knowledge required to investigate and report on electrical incidents and probable causes.

It includes investigating and reporting the possible electrical cause of incident/s resulting in electric shock, injury, fatality or property damage. It also includes working safely, gathering information from an incident site and from witnesses, conducting site tests, gathering and arranging for analysis of forensic evidence, documenting findings and presenting evidence in court.

The skills and knowledge described in this unit require a licence or permit to practice in the workplace where work is carried out on electrical installations which are designed to operate at voltages greater than 50 volt (V) alternating current (a.c.) or 120 V direct current (d.c.).

Competency development activities in this unit are subject to regulations directly related to licensing. Where a licence or permit to practice is not held, a relevant contract of training, such as an Australian Apprenticeship, may be required.

Additional and/or other conditions may apply in some jurisdictions subject to regulations related to electrical work. Practice in the workplace and during training is also subject to work health and safety (WHS)/occupational health and safety (OHS) regulations.

Pre-requisite Unit

UEECD0007 Apply work health and safety regulations, codes and practices in the workplace

UEECD0019 Fabricate, assemble and dismantle utilities industry components

UEECD0020 Fix and secure electrotechnology equipment

UEECD0051 Use drawings, diagrams, schedules, standards, codes and specifications

UEECD0016 Document and apply measures to control WHS risks associated with electrotechnology work

UEEEL0003 Arrange circuits, control and protection for general electrical installations

UEEEL0020 Solve problems in low voltage a.c. circuits

UEEEL0023 Terminate cables, cords and accessories for low voltage circuits

UEEEL0018 Select wiring systems and cables for low voltage general electrical installations

UEEEL0005 Develop and connect electrical control circuits

UEEEL0019 Solve problems in direct current (d.c.) machines

UEEEL0021 Solve problems in electromagnetic devices

UEEEL0014 Isolate, test and troubleshoot low voltage electrical circuits

UEEEL0008 Evaluate and modify low voltage heating equipment and controls

UEEEL0009 Evaluate and modify low voltage lighting circuits, equipment, and controls

UEEEL0010 Evaluate and modify low voltage socket outlets circuits

UEEEL0024 Test and connect alternating current (a.c.) rotating machines

UEEEL0025 Test and connect transformers

UEEEL0012 Install low voltage wiring, appliances, switchgear and associated accessories and

UEECD0043 Solve problems in direct current circuits

or

UEECD0044 Solve problems in multiple path circuits

UEECD0046 Solve problems in single path circuits

Competency Field

Electrical

Unit Sector

Electrotechnology

Elements and Performance Criteria

ELEMENTS

Elements describe the essential outcomes.

1 Prepare to investigate electrical incident

PERFORMANCE CRITERIA

Performance criteria describe the performance needed to demonstrate achievement of the element.

- 1.1** WHS/OHS requirements and workplace procedures for a given work area are identified, obtained and applied
- 1.2** WHS/OHS risks are identified and assessed, and risk control measures and workplace procedures

- implemented in preparation for electrical investigation
- 1.3 Safety hazards not previously identified are noted on risk assessment, risk assessed and risk control measures identified and implemented
 - 1.4 Notification of the electrical incident is reviewed in consultation with relevant person/s to establish the nature and extent of the electrical investigation
 - 1.5 Relevant person/s is consulted to ensure the investigation is coordinated effectively with others involved on the worksite
 - 1.6 Tools, equipment and testing devices needed for the electrical investigation are obtained in accordance with workplace procedures and checked for correct operation and safety
- 2 Investigate electrical incident to determine cause**
- 2.1 WHS/OHS risk control measures and workplace procedures for carrying out electrical investigation are followed
 - 2.2 Need to inspect, test or measure live electrical work is determined and conducted in accordance with WHS/OHS requirements and workplace procedures
 - 2.3 Cooperation of relevant person/s involved in the electrical investigation is sought and obtained
 - 2.4 Recreation of incident situation is undertaken and conducted in accordance with WHS/OHS requirements and workplace safety procedures
 - 2.5 Witnesses to the incident are interviewed in accordance with privacy principles, workplace procedures and protocols to determine the circumstances of the incident
 - 2.6 Physical evidence of probable causes of the electrical incident are identified by way of inspection and testing, and evidence is documented in accordance with workplace procedures
 - 2.7 Forensic evidence gathered at the incident site is handled to avoid contamination or damage, permission is obtained to remove evidence from the site, documentation is completed, as required, and evidence is forwarded to the relevant person/s for analysis

	2.8	Witness statements and evidence gathered at the site are documented in accordance with workplace procedures
	2.9	Actions are taken to prevent any unsafe electrical hazards found on the site from posing a risk of further injury or damage in accordance with workplace procedures
3	Report electrical investigation findings	
	3.1	Reports of forensic evidence analysis are obtained and reviewed for inclusion in the final investigation report
	3.2	Cause/s of electrical incident is extrapolated from the evidence using acceptable deductive methods
	3.3	Investigation procedures, finding, conclusions and recommendation are documented in accordance with workplace procedures
	3.4	Investigation report is forwarded to relevant person/s in accordance with workplace procedures and regulatory requirements
	3.5	Documented evidence in the investigation report is given in court, as required, honestly and without bias following court procedures and protocols

Foundation Skills

Foundation skills essential to performance are explicit in the performance criteria of this unit of competency.

Range of Conditions

Range is restricted to essential operating conditions and any other variables essential to the work environment.

Non-essential conditions may be found in the UEE Electrotechnology Training Package Companion Volume Implementation Guide.

Investigating and reporting on electrical incidents must include at least two of the following incidents:

- reported electric shock
- injury from a reported electrical source
- fatality from a reported electrical source
- property damage from a reported electrical source

Electrical incident investigation must occur in at least one of the following:

- domestic premises
- non-domestic premises
- construction site

Electrical incident investigation witness statements must include the following:

- workplace procedures and results of inspections and tests undertaken on site
- forensic evidence removed from site and for analysis
- aspects of the electrical installation that do not comply with relevant safety, industry standards and requirements

Unit Mapping Information

This unit replaces but is not equivalent to UEENEEG172A Investigate and report on electrical incidents and causes.

Links

Companion Volume implementation guides are found in VETNet - -

<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=b8a8f136-5421-4ce1-92e0-2b50341431b6>

Assessment Requirements for UEEEL0051 Investigate and report on electrical incidents and causes

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Performance Evidence

Evidence required to demonstrate competence in this unit must be relevant to and satisfy all of the requirements of the elements, performance criteria and range of conditions on at least one occasion and include:

- recreating incident situation as accurately as evidence indicates
- interviewing and taking witness statements in accordance with workplace procedures
- gathering relevant physical evidence and treating it in accordance with workplace procedures
- documenting evidence gathered at the site, including:
 - aspects of the electrical installation that do not comply with safety standards and requirements
 - forensic evidence removed for analysis
 - written and photographic evidence
 - workplace procedures and results of tests undertaken
- documenting electrical investigation procedures, findings and conclusions appropriately
- reviewing scope and extent of the investigation from initial notification of the electrical incident
- taking appropriate actions to prevent any unsafe electrical hazards found on the site from posing a risk of any further injury or damage
- using deductive methods to determine the cause or causes of the electrical incident.

Knowledge Evidence

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

- electrical incidents - investigation and reporting
- procedures and protocols for giving evidence in court encompassing:
 - process for responding to a witness summons
 - requirements for preparing to appear in court to give evidence
 - court procedures and protocols for giving evidence

- procedures and processes for responding to reported electrical incidents encompassing:
 - reporting requirements of the electricity legislation for electrical accidents on customer's premises
 - responsibility for investigating electrical accidents on customer's premises
 - reporting procedures of electrical accidents on consumer's premises and distributor's assets
 - actions to be taken when an electrical incident causes loss of life, personal injury or property damage
 - initial task of an investigator of an electrical incident
 - extent of evidence needed to be gathered from the site of an electrical incident
- conditions and actions that could result in death, injury or property damage from an electrical cause encompassing:
 - non-compliance defects of an electrical installation
 - connection or use of unsuitable (not approved) electrical equipment and appliances
 - failure to follow safe working procedures
 - deliberate misuse
 - unacceptable rise in potential of exposed and extraneous conductive parts
- causes of rise in potential of exposed and extraneous conductive parts encompassing:
 - high impedance in the main or service neutral conductor of a multiple earthed neutral (MEN) system
 - earth faults
 - high impedance in the protective earthing under fault conditions
 - ineffective equipotential bonding under fault conditions
 - ineffective protective device under fault conditions
- effects and consequences of current through the human body
- electrical sources of fire in building and premises
- advanced electrical testing and measuring devices encompassing:
 - testing/measuring devices and their application
 - safe connection of testing/measuring devices into a circuit
 - taking readings
 - storage, maintenance and care of testing/measuring devices
- problem-solving techniques
- relevant industry standards
- relevant manufacturer specifications and operating instructions for tools and equipment
- relevant job safety assessments or risk mitigation processes
- relevant tools, equipment, resources and materials
- relevant WHS/OHS legislated requirements
- relevant workplace documentation
- relevant workplace policies, procedures and instructions, including legal requirements for the removal of evidence from site.

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 suitable workplace operational situations where it is appropriate to do so; where this is not appropriate, assessment must occur in simulated suitable workplace operational situations that replicate 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 simulations
- relevant and appropriate materials, tools, facilities, 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

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