



Australian Government

UEEEEC0071 Troubleshoot fire protection systems

Release: 1

UEEEEC0071 Troubleshoot fire protection systems

Modification History

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 troubleshoot fire protection systems.

It includes finding and repairing fire protection system faults that include multiple connected detection, warning and fire control devices; and remote monitoring to the sub-assembly level. It also includes working safely, applying logical fault-finding workplace procedures, conducting repairs, safety and functional testing, and completing the necessary service documentation.

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, skills and knowledge described in this unit require a relevant contract of training, such as an Australian Apprenticeship.

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.

No other licensing, legislative or certification requirements apply to this unit at the time of publication.

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

UEEEEC0041 Install fire detection and warning system apparatus

UEEEEC0076 Verify compliance and functionality of fire protection system installations

UEEEEC0026 Enter and verify programs for fire protection systems

UEEEEC0008 Commission large fire protection systems

Competency Field

Electronics and Communications

Unit Sector

Electrotechnology

Elements and Performance Criteria

ELEMENTS

Elements describe the essential outcomes.

1 Prepare to find and rectify fire protection system faults

PERFORMANCE CRITERIA

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

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| 1.1 | WHS/OHS requirements and workplace procedures for a given work area are identified and applied |
| 1.2 | WHS/OHS risk control measures and workplace procedures are followed in preparation for work activities |
| 1.3 | Extent of work to be undertaken is confirmed from fault/breakdown reports and/or discussions with appropriate person/s |
| 1.4 | Advice is sought from the work supervisor to ensure the work is coordinated effectively with others |
| 1.5 | Sources of materials required for fault-finding work are determined in accordance with workplace procedures |
| 1.6 | Tools, equipment and testing devices needed to locate faults are obtained in accordance with workplace procedures and checked for correct operation and safety |
| 2 | Find and repair fire protection system faults |
| 2.1 | WHS/OHS risk control measures and workplace procedures for carrying out work are followed |
| 2.2 | Need to test and measure live work is determined in accordance with WHS/OHS requirements and conducted in accordance with workplace safety procedures |
| 2.3 | Circuits/machines/plant/system interfaces are checked and isolated in accordance with WHS/OHS |

requirements and workplace procedures

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| 2.4 | Safety hazards resulting from the fault or breakdown are documented, assessed and risk control measures devised and implemented in consultation with appropriate person/s |
| 2.5 | Fault finding is approached methodically using fire protection system and components and measured values of system parameters |
| 2.6 | System components are dismantled, as required, and parts stored to protect against loss or damage |
| 2.7 | Faulty system/components are inspected, rechecked and their fault status confirmed |
| 2.8 | Materials/replacement parts required to rectify faults are sourced and obtained in accordance with workplace procedures |
| 2.9 | Effectiveness of the fire protection system repair is tested in accordance with workplace procedures |
| 2.10 | Apparatus is reassembled, inspected, tested and prepared for return to service |
| 2.11 | Unplanned situations are responded to in accordance with workplace procedures in a manner that minimises risk to personnel and equipment |
| 2.12 | Fault-finding and repair activities are carried out without unnecessary damage to apparatus, circuits, the surrounding environment or services using sustainable energy practices |
| 3 Complete and report fault-finding and repair activities | 3.1 WHS/OHS work completion risk control measures and workplace procedures are followed |
| | 3.2 Reusable, faulty or worn components are tagged and despatched for repair |
| | 3.3 Fault-finding and repair work activities are documented in accordance with workplace procedures |

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.

Troubleshooting fire protection systems must include at least the following:

- two fire alarm and warning systems, including:
 - one fire alarm system with at least 50 input devices, 20 output devices and two system interface controls
 - one fire warning system with at least 50 speakers, five interface communication devices and two warning indicators
- voice message facilities

Finding and repairing must include at least six of the following faults in fire alarm and warning systems:

- open circuit
- short circuit
- incorrect connections
- insulation failure
- program failure
- apparatus/component failure
- related mechanical failure
- electrical induced interference

Unit Mapping Information

This unit replaces and is equivalent to UEENEEH165A Troubleshoot fire protection systems.

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 UEEEC0071 Troubleshoot fire protection systems

Modification History

Release 1. This is the first release of this unit of competency in the UEE Electrotechnology 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, performance criteria and range of conditions on at least two separate occasions and include:

- applying relevant work health and safety (WHS)/occupational health and safety (WHS/OHS) requirements, workplace procedures and practices, including using risk control measures
- applying sustainable energy principles and practices
- completing documentation and reports correctly
- dealing with intermittent faults
- dealing with unplanned events/situations in accordance with workplace procedures in a manner that minimises risk to personnel and equipment
- determining scope of work from fault/breakdown reports and discussions with appropriate person/s
- finding and repairing faults in fire protection system
- finding fire protection system faults efficiently
- inspecting and testing fire protection system in accordance with workplace procedures and industry standards
- rectifying fire protection system faults effectively
- using methodical or analytical techniques in fault-finding techniques.

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:

- common fire protection systems faults
- effect-to-cause reasoning and assumptions of possible causes
- factors to consider in clarifying the nature of a fire protection system fault
- fire protection system fault-finding techniques
- fire protection technologies
- input devices, including conventional, analogue or analogue addressable fire detectors, flow switch connections or switch connections
- interface communication devices can be warden in communication phones and remote public

address (PA) inputs

- methods for testing assumptions
- output devices, including shutdown signal, door or system release controls and solenoid valve controls
- problem-solving concepts and techniques
- relevant job safety assessments or risk mitigation processes
- relevant manufacturer specifications
- relevant WHS/OHS legislated requirements
- relevant workplace documentation
- relevant workplace policies and procedures
- system interface controls, including communication signals to remote control and indicating equipment, building monitoring systems, paging system and colour graphics
- types of fire protection systems and the difference between automatic and passive systems and wet and dry systems
- typical causes of intermittent faults, including vibration, shock, changes in temperature and electromagnetic interference
- warning indicators, including flashing lights for hearing impaired persons and fire brigade building indication.

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 suitable simulated 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
- resources that reflect current industry practices in relation to finding and repairing faults in fire protection systems
- applicable documentation, including workplace procedures, equipment specifications, regulations, codes of practice and operation manuals.

Links

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