



Australian Government

PUAFIR607 Apply electrical/electronic knowledge to fire investigations

Release: 2

PUAFIR607 Apply electrical/electronic knowledge to fire investigations

Modification History

Release 2. This is the second release of this unit of competency in the PUA Public Safety Training Package.

Release 1. This is the first release of this unit of competency in the PUA Public Safety Training Package.

Application

This unit of competency involves the skills and knowledge required to inspect and assess a fire scene to determine whether the origin and possible cause of fire is related to the presence of electrical installations and appliances. It includes identifying sources of evidence, collecting and documenting evidence in preparation for analysis, findings and conclusions.

The unit applies to fire investigators who are required to assess a fire scene to identify the presence of electrical circuits, equipment or appliances that may have contributed to the cause of fire.

The fire sector is those sections of government departments, statutory authorities or organisations that have responsibility under jurisdictional arrangements for the delivery of firefighting and fire management services.

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

Pre-requisite Unit

It is essential that the prerequisite units listed below are obtained prior to the issuance of this unit to individuals within the fire sector or the units contributing to the attainment of a fire qualification.

PUAFIR605 Determine origin and cause of mobile property fire

PUAFIR609 Collect, record and coordinate the analysis of physical evidence

One of the following:

PUAFIR603 Determine origin and cause of wildfire

PUAFIR604 Determine origin and cause of structure fire

Competency Field

Fire

Unit Sector

Fire

Elements and Performance Criteria

ELEMENTS

Elements describe the essential outcomes.

1 Coordinate fire investigation

PERFORMANCE CRITERIA

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

1.1 Cooperation with multi-organisational personnel during the investigation is consistent with roles and responsibilities and is in accordance with organisational procedures

1.2 Information for the fire investigation from multi-organisational personnel is identified and obtained, in accordance with organisational procedures

1.3 Personal protective clothing and equipment is used, in accordance with organisational procedures

1.4 Work, Health and Safety (WHS)/Occupational Health and Safety (OHS) procedures incident are followed

2 Identify, assess and collect circuitry components and appliances

2.1 External and internal survey of fire scene is conducted to identify and assess electrical circuitry, electrical equipment and appliances

2.2 Relevance of electrical circuitry, equipment and appliances to fire cause is assessed and established

2.3 Arrangements are made for the attendance of electrical specialist where it is believed that electrical systems, components or appliances may have contributed to the fire

2.4 Expertise in electrical infrastructure is sourced, where required

2.5 Interviews with witnesses are conducted, in accordance with organisational procedures

2.6 Circuitry plans and/or layouts are obtained

2.7 Areas or items of evidential value at the fire scene are identified and preserved

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| | 2.8 | Evidence is recorded and collected at the fire scene and observations are documented, in accordance with organisational procedures |
| | 2.9 | Electrical circuitry components, equipment and appliances of evidential value are protected, in accordance with organisational procedures |
| 3 Arrange for tests on electrical evidence collected | 3.1 | Advice is received from electrical specialist as to electrical or appliance systems |
| | 3.2 | Arrangements are made for laboratory and specialist testing and assessment of electrical items |
| 4 Interpret and record findings | 4.1 | Circuitry components on site plans are documented to support evidence and conclusions |
| | 4.2 | Circuit diagrams and electrical plans relating to building, components and equipment are determined and interpreted |
| | 4.3 | Specialist report on electrical circuitry or equipment failure as contributing to the cause of fire is obtained, where required |
| | 4.4 | Specialist findings about ignition are considered in conjunction with other observations and evidence from the fire |
| | 4.5 | Product recall and material safety data sheet databases are researched, as required |
| | 4.6 | Recommendations are forwarded to authorities and/or stakeholders, as required |
| | 4.7 | Findings are interpreted and recorded, in accordance with organisational 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 Companion Volume Implementation Guide.

Unit Mapping Information

This unit replaces and is equivalent to PUAFIR607A Apply electrical/electronic knowledge to fire investigations.

Links

Companion Volume Implementation Guides are found in VETNet -

<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=3eca5672-6d5a-410b-8942-810d0ba05bbf>

Assessment Requirements for PUAFIR607 Apply electrical/electronic knowledge to fire investigations

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Performance Evidence

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

- applying Work, Health and Safety (WHS)/Occupational Health and Safety (OHS) organisational requirements
- arranging for tests on electrical evidence collected
- checking and assessing scene safety including isolating power
- coordinating fire investigations including other organisations and support personnel
- demonstrating knowledge of basic electrical circuitry
- documenting findings and identifying components of electrical equipment and relationships to electrical causes of ignition
- identifying potential ignition sources and processes of elimination
- identifying, assessing and collecting circuitry components and appliances
- implementing legislation, codes of practice and industry standards
- interpreting and recording findings
- operating visual and electric recording equipment
- protecting electrical circuitry components, equipment and appliances of evidential value
- undertaking an external and internal assessment of scene
- using information technology and databases
- utilising organisationally approved scientific methods
- working with methods, techniques and equipment for handling, collecting, preserving, packaging, labelling, storing and transporting evidence

Knowledge Evidence

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

- basic circuit diagrams and electrical plans relating to electric components and equipment
- electrical circuitry components, equipment and appliances of evidential value
- electrical circuitry including design, installations, overload protection, power supply,

resistance, short circuit or fault currents and voltage, current or kilowatts in different appliances

- fire scene observations including cable insulation, circuit and component failure, circuit mapping, components, evidence electrical tracking, flame propagation in hazardous, locations, operation of protective devices, wire overheating, starting, arcing and burn patterns
- laboratory or specialist testing sequence of electrical items
- organisational documentation, policies and procedures
- organisational protocols and procedures including legal and regulatory requirements for the investigation of fire incidents
- other organisations and agencies including support personnel
- product recall processes
- protection of evidential value
- requirements for reporting and recording
- safety data sheet databases
- sources of industry standards relating to electrical installations and appliances
- types of operation and potential faults in electrical and electronic equipment and appliances
- Work, Health and Safety (WHS)/Occupational Health and Safety (OHS) organisational requirements including risk mitigation

Assessment Conditions

As a minimum, assessors must satisfy applicable regulatory requirements, which include requirements in the Standards for Registered Training Organisations current at the time of assessment.

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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.

Assessment must occur in workplace operational situations. Where this is not appropriate, assessment must occur in industry approved simulated workplace operational situations that reflect workplace conditions.

Resources for assessment must include access to

- a range of relevant exercises, case studies and/or simulations
- relevant and appropriate materials, equipment, tools and personal protective clothing and equipment currently used in industry including
 - examples of electrical circuitry, electrical equipment and appliances damaged by electrical faults which resulted in fire
 - various electrical circuitry, electrical equipment and appliances
- applicable documentation including organisational procedures, industry standards, equipment specifications, regulations, codes of practice and operation manuals.

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