



Australian Government

**UEENEEH162A Verify compliance and
functionality of fire protection system
installations**

Release: 2

UEENEEH162A Verify compliance and functionality of fire protection system installations

Modification History

Not applicable.

Unit Descriptor

Unit Descriptor

1) Scope:

1.1) Descriptor

This unit covers testing and visual inspection for verifying that a fire protection system and components are safe, and complies with requirements and functions as intended. It encompasses working safely, conducting compliance tests, conducting visual inspections, identifying non-compliance defects and mandatory reporting requirements.

Application of the Unit

Application of the Unit 2)

This unit is intended to augment previously 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 require a license to practice in the workplace where plant and equipment operate at voltage above 50 V a.c. or 120 V d.c. However other conditions may apply in some States/Territories subject to regulations related to electrical work. Where the fire alarm system has a call-back-to-base facility practice in the workplace is also

License to practice

3)

subject to ACMA regulations to undertake cabling work.

Note:

Unit 'UEENEEF102A' provides the required skill and knowledge for registration in accordance with ACMA regulations for undertaking cabling work.

Practice in the workplace and during training is also subject to regulations directly related to occupational health and safety and where applicable contracts of training such as apprenticeships.

Pre-Requisites

Prerequisite Unit(s)

4)

Competencies

4.1)

Granting competency in this unit shall be made only after competency in the following unit(s) has/have been confirmed.

UEENEEE10 1A Apply Occupational Health and Safety regulations, codes and practices in the workplace

UEENEEE10 2A Fabricate, assemble and dismantle utilities industry components

UEENEEE10 5A Fix and secure electrotechnology equipment

UEENEEE10 7A Use drawings, diagrams, schedules, standards, codes and specifications

UEENEEH16 1A Install fire detection and warning system apparatus

Literacy and numeracy skills

4.2)

Participants are best equipped to achieve competency in 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)

This unit contains Employability Skills

The required outcomes described in this unit of 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.
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Elements and Performance Criteria

ELEMENT

PERFORMANCE CRITERIA

1 Prepare to verify fire protection installations	1.1 OHS procedures for a given work area are obtained and understood.
	1.2 Established OHS risk control measures and procedures are followed in preparation for the work.
	1.3 Safety hazards that have not previously been identified are noted and established risk control measures are implemented.
	1.4 Appropriate personnel are consulted to ensure

ELEMENT

PERFORMANCE CRITERIA

- the work is co-ordinated effectively with others involved on the work site.
- 1.5 Location of system components is determined from specifications and diagrams.
- 1.6 Inspection and tests are appropriately sequenced in accordance with job schedule.
- 1.7 Materials needed for the tests and verification are obtained in accordance with established procedures and checked against job requirements.
- 1.8 Tools, equipment and testing devices needed to verify compliance are obtained in accordance with established procedures and checked for correct operation and safety.
- 2 Visually inspect the installation
- 2.1 OHS risk control measures and procedures for carrying out the work are followed.
- 2.2 Circuits/machines/plant are checked as being isolated where necessary in strict accordance OHS requirements and procedures.
- 2.3 Cabling/wiring is checked for appropriate type and size.
- 2.4 Cabling/wiring, accessories and fire alarm warning components are validated as being suitably located, securely fixed and suitably protected from damage or corrosion.
- 2.5 Accessories and components are validated as being appropriately rated and meeting functional requirements.
- 2.6 Evidence that equipment complies with safety and functional requirements is cited.
- 2.7 Established methods for dealing with unexpected situations are discussed with appropriate person or persons and documented.
- 2.8 Unexpected situations are dealt with safely and with the approval of an authorised person.

ELEMENT

PERFORMANCE CRITERIA

		Inspection is carried out efficiently without waste of materials or damage to apparatus and the surrounding environment or services and using sustainable energy practices.
3	Conduct tests	<p>3.1 OHS risk control measures and procedures for carrying out the work are followed.</p> <p>3.2 Back-to-base facilities and other system interfaces are isolated in accordance with established procedures.</p> <p>3.3 Testing or measuring on a live and operating system in strict accordance with OHS requirements and within established safety procedures.</p> <p>3.4 Circuits/machines/plant/other system interfaces are checked as being isolated to ensure the system is not activated during testing in strict accordance OHS requirements and procedures.</p> <p>3.5 Electrical tests are conducted to verify that the electrical circuit within the fire installation are safe and function as intended.</p> <p>3.6 System tests are conducted to verify that the fire protection equipment and cabling/wiring within the fire protection installation is safe and functions as intended.</p> <p>3.7 Established methods for dealing with unexpected situations are discussed with appropriate person or persons and documented.</p> <p>3.8 Unexpected situations are dealt with safely and with the approval of an authorised person.</p> <p>3.9 Testing is carried out efficiently without waste of materials or damage to apparatus and the surrounding environment or services and using sustainable energy practices.</p>
4	Report inspection and verification findings	<p>4.1 OHS work completion risk control measures and procedures are followed.</p> <p>4.2 Work site and equipment is cleaned and made</p>

ELEMENT

PERFORMANCE CRITERIA

- safe in accordance with established procedures.
- 4.3 Non-compliance defects are identified and reported in accordance with established procedures.
- 4.4 Recommendations for rectifying defects are made in accordance with established procedures.
- 4.5 Work completion is documented and an appropriate person or persons notified in accordance with established procedures.

Required Skills and Knowledge

REQUIRED SKILLS AND KNOWLEDGE

8) Evidence shall show that knowledge has been acquired of safe working practices and verifying compliance and functionality of fire protection installations.

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

KS01-EH162A Fire protection installations, testing and verification methods

Evidence shall show an understanding of methods for testing and verifying compliance and functionality of fire protection installation to an extent indicated by the following aspects:

2.7.5.3

T1. Mandatory and optional testing and verification requirements applicable to fire protection installations.

T2. Testing techniques

T3. Features of fire protection installations that can be visually inspected

2.9.37

Evidence shall show an understanding of fire alarm and warning system routine testing to an extent indicated by the following aspects:

T1. Types and uses of test equipment

T2. Fire alarm and warning system components and their location

T3. Periodic testing requirements to meet manufacturer's and standards requirements

Evidence Guide

EVIDENCE GUIDE

9) The evidence guide provides advice on assessment and must be read in conjunction with the Performance Criteria, Required Skills and Knowledge, the Range Statement and the Assessment Guidelines for this Training Package. .

The Evidence Guide forms an integral part of this unit. It must be used in conjunction with all parts of the 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-preferred model for apprenticeships. However, where summative (or final) assessment is used it must 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.

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. Sources of evidence need to be 'rich' in nature to minimise error in judgment.

Activities associated with normal everyday work influence decisions about how/how much 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 practised. 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 – UEE11'. Evidence shall also comprise:

- A representative body of work performance 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 statement
 - Apply sustainable energy principles and practices as specified in the performance criteria and range statement
 - Demonstrate an understanding of the essential knowledge and associated skills as described in this unit. It may be required by some jurisdictions that RTOs provide a percentile graded result for the purpose of regulatory or licensing requirements.
 - Demonstrate an appropriate level of skills enabling employment
 - Conduct work observing the relevant Anti Discrimination legislation, regulations, policies and workplace procedures
- Demonstrated consistent performance across a representative range of contexts from the prescribed items below:
 - Verify compliance and functionality of fire protection installations as described in 8) and including:

Identifying visual defects.

Conducting all electrical tests safely and correctly.

Conducting all fire alarms and warning tests safely and correctly.

Identifying non-compliant defects from test results.

Recommending appropriate corrective actions.

Acting within regulatory limits.

Reporting legibly and accurately.

Dealing with unplanned events by drawing on essential knowledge and skills to provide appropriate solutions incorporated in a 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 work as prescribed by this unit.

These should be part of the formal learning/assessment environment.

Note:

Where simulation is considered a suitable strategy for assessment, conditions must be authentic and as far as possible reproduce and replicate the workplace and be consistent with the approved industry simulation policy.

The resources used for assessment should reflect current industry practices in relation to verifying compliance and functionality of fire protection installations.

Method of assessment 9.4)

This 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 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 skills described in this unit.

**Concurrent
assessment and
relationship with
other units** **9.5)**

There are no concurrent assessment recommendations for this unit.

Range Statement

RANGE STATEMENT

10) This unit shall be demonstrated in relation to at least two different new or existing fire protection installations and shall include:

The following components:

- Fire alarm system with at least 50 input devices, 20 output device and 2 system interface controls
- Fire warning system with at least 5 speakers, 5 interface communication devices and 2 warning indicators
- Voice message facilities

Note:

1. Input devices can be conventional, analogue or analogue addressable fire detectors, flow switch connections or switch connections and the like.
2. Output devices can be shutdown signal, door or system release controls, solenoid valve controls and the like.
3. System interface controls can be communication signals to remote Control and indicating equipment, Building monitoring systems, paging system, Colour graphics and or the like.
4. Interface communication devices can be Warden In communication phones, Remote PA inputs and the like.
5. Warning Indicators are flashing lights for hearing impaired persons, fire brigade building indication and the like.

Verification by:

- Visual inspection of cabling/wiring, accessories and controls
- Conducting electrical tests

Note:

1. Electrical testing includes isolation testing; insulation resistance of equipment; resistance of the internal circuits of equipment; polarity of supply and equipment; continuity of earthing; correct electrical connections load current.
 2. Electrical testing may be limited by the scope permitted under restricted electrical work
- Conducting system tests as required by regulations

Note:

1. System testing includes weekly requirements to annual performance verification
2. Examples of tests are operation and control of indicating equipment, in-situ testing of detectors, taking sound measurements and the like

Generic terms used throughout this Vocational Standard shall be regarded as part of the Range Statement in which competency is demonstrated. The definition of these

RANGE STATEMENT

and other terms that apply are given in Volume 2, Part 2.1.

Unit Sector(s)

Not applicable.

Competency Field

Competency Field	11)
	Electronics