



Australian Government

Department of Education, Employment and Workplace Relations

UEENEEE110A Develop and implement energy sector maintenance programs

Release: 1

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Modification History

Not applicable.

Unit Descriptor

Unit Descriptor

1) Scope:

1.1) Descriptor

This unit covers the development of maintenance programs to ensure safe and continued operation of plant and equipment. It encompasses evaluating risks associated with equipment failure, development of failsafe strategies incorporating maintenance frequency, repair/overhaul/replacement policies, and development of record and reporting system.

Application of the Unit

Application of the Unit 2)

This unit is intended to apply to any formal recognition for this standard at the aligned AQF 5 level or higher. It may be used in employment-based programs incorporated in approved contracts of training.

Licensing/Regulatory Information

License to practice 3)

The skills and knowledge described in this unit do not require a license to practice in the workplace. However, practice in this unit is 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)

There are no prerequisite competencies for this unit.

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 4 Writing 4 Numeracy 4

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.

Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA
1 Establish maintenance requirements.	1.1 OHS processes and procedures for a given work area are identified, obtained and understood.
	1.2 Established OHS risk control measures and procedures in preparation for the work are followed.
	1.3 Policies and procedures are developed to include OHS practices, skills required and frequency and level of maintenance work.
	1.4 The extent of the maintenance program is determined from plant performance specifications and in consultation with relevant person(s).
	1.5 Appropriately competent persons are engaged to assess the risks associated with individual equipment failure.
	1.6 Level and frequency of repair/replace to be done under maintenance work is established from risk assessment reports and manufacture's recommendations and standards reflecting acceptable exposure to risk of equipment failure.
	1.7 Systems are established to manage and record maintenance work in accordance with organisation and regulatory requirements.
2 Develop and implement maintenance program.	2.1 Schedules are developed detailing maintenance levels and frequency for all equipment items based risk assessment reports and manufacture's recommendations.
	2.2 Procedures are developed and implemented to ensure the maintenance program is followed in accordance with the planned schedule and requirements.
	2.3 Procedures are developed and implemented to ensure records are maintained in accordance with planned schedule and requirements.
	2.4 Maintenance program is documented in accordance with in accordance with professional

ELEMENT**PERFORMANCE CRITERIA**

standards and organisation procedures.

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|---|-------------------------------|-----|---------------------------------------------------------------------------------------------------------------------------------------------------|
| 3 | Evaluate maintenance program. | 3.1 | Periodic and sample inspection reports are used to ascertain maintenance quality and the need for revision of maintenance schedule and frequency. |
| | | 3.2 | Maintenance schedule is periodically reviewed and revised to maintain acceptable level of risk associated with equipment failure. |

Required Skills and Knowledge

REQUIRED SKILLS AND KNOWLEDGE

8) This describes the essential skills and knowledge and their level, required for this unit.

Evidence shall show that knowledge has been acquired of safe working practices and developing and implementing maintenance programs.

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

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Scheduled maintenance processes

Evidence shall show an understanding of scheduled maintenance processors to an extent indicated by the following aspects:

T1 Maintenance principles encompassing:

- maintenance function
- role of maintenance department
- occupational health and safety requirements

T2 Maintenance systems encompassing:

- maintenance terminology
- preventative maintenance
- predictive maintenance
- corrective maintenance

T3 Data acquisition encompassing:

- plant history cards/files
- inspection techniques
- predictive maintenance
- remote visual inspection
- non-destructive testing
- thermography
- vibration analysis
- oil analysis

T4 Maintenance plan encompassing:

- characteristics of plant operation
- assessment of failure characteristics
- link failure characteristics to maintenance systems
- identify production windows
- resources
- labour
- materials
- establish plan

REQUIRED SKILLS AND KNOWLEDGE

- implementation procedures

T5 Review of maintenance plan encompassing:

- analysis of records
- manual recording methods

T6 Computerised recording methods

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 is to 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 accordance 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 have a bearing on the decision as to how much and how detailed 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 must 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:
 - Develop and implement maintenance programs as described in 8) and including:
 - A Determining the extent of the maintenance program accurately.
 - B Establishing the level and frequency of maintenance reflecting acceptable exposure to risk of equipment failure.
 - C Developing an effective maintenance schedule implementation procedures.
 - D Developing a maintenance record system.
 - E Developing Ongoing maintenance evaluation scheme.
 - F Documenting the maintenance program clearly.
 - G 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.

Note:

Successful completion of relevant vendor training may be used to contribute to evidence on which competency is deemed. In these cases the alignment of outcomes of vendor training with performance criteria and critical aspects of evidence shall be clearly identified.

**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 in this unit.

These should be used in the formal learning/assessment environment.

Note:

Where simulation is considered a suitable strategy for assessment, conditions for assessment 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 developing and implementing maintenance programs.

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 relates to the unit as a whole providing the range of contexts and conditions to which the performance criteria apply. It allows for different work environments and situations that will affect performance.

This unit shall be demonstrated in relation to developing and implement a maintenance program for a plant with at least 10 different types of items included in the schedule. Plant may be for production, process or building services.

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

Unit Sector(s)

Not applicable.

Competency Field

Competency Field	11)
	Electrotechnology