



Australian Government

Department of Education, Employment and Workplace Relations

UEPOPS505B Produce maintenance strategies for generation production plant

Release: 1

UEPOPS505B Produce maintenance strategies for generation production plant

Modification History

Not applicable.

Unit Descriptor

Unit Descriptor

1) Scope:

1.1) Descriptor

This unit deals with the skills and knowledge required to undertake the establishment and implementation of maintenance strategies for generation production plant that may include boiler, turbine, hydro plant, electrical, control and monitoring, ash and dust; water treatment and fuel plant.

Application of the Unit

Application of the Unit 2)

This unit is intended to augment formally 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 do not require a licence to practise 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 and the like.

Pre-Requisites

Prerequisite Unit(s) 4)

Competencies 4.1)

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

Where pre-requisite pathways have been identified. All competencies in the Common Unit Group must be have been completed.

Common Unit Group

Unit Code	Unit Title
UEPOPS425B	Produce maintenance plans for generation production plant.

Literacy and numeracy skills 4.2)

Participants are best equipped to achieve this unit if they have reading, writing and numeracy skills indicated by the following levels. A description of what each level entails is provided in Section 2.3.1 Language, Literacy and Numeracy.

Reading	5	Writing	5	Numeracy	5
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Employability Skills Information

Employability Skills 5)

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 Research and plan for strategies	1.1 Existing strategies are reviewed for maintenance requirements and directions
	1.2 Occupational Health and Safety standards, statutory requirements, relevant Australian standards, codes of practice, manufacturers specifications, environmental requirements and enterprise procedures are identified
	1.3 Enterprise and/or site business plans are reviewed for impact on maintenance work
	1.4 Major maintenance activities are identified with reference to scope and time frames
	1.5 Time frames of strategies and work are established
	1.6 Relevant indicators of performance are defined
	1.7 Cost estimating and economic evaluation principles are applied in order to identify maintenance costs
	1.8 Legal implications of work to be undertaken are identified
	1.9 Risk assessment principles are applied to determine strategic plans
	1.10 Desired outcomes for maintenance work are established
	1.11 Where appropriate, the teams and individuals roles and responsibilities within the team are identified and, where required, assist in the

ELEMENT	PERFORMANCE CRITERIA
	provision of the on-the-job training
2 Establish strategies	2.1 Resources required to implement strategies are identified and detailed against projects
	2.2 Time frames and potential variances for maintenance scheduling are defined
	2.3 Interdependence of activities is identified and documented
	2.4 Planned objectives are documented in accordance with enterprise requirements
	2.5 Coordinated maintenance plans are documented and submitted in accordance with enterprise requirements
3 Implement strategies	3.1 Strategies and plans are implemented in order to facilitate required outcomes
	3.2 Strategies are implemented and variances are identified
	3.3 Corrective action to restore strategy objective is identified and established
	3.4 Strategies and plans are re-developed/ updated to satisfy outcomes
	3.5 Opportunities for strategy enhancements are identified and documented for inclusion in future strategy preparation

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 producing maintenance strategies for generation production plants.

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

The extent of the Essential Knowledge and Associated Skills required follows:

KS01-PO505B Maintenance strategies for generation production plant

T1 Evidence shall show that knowledge has been acquired for safe working practices of:

- Relevant environmental, occupational health and safety legislation and regulations
- Enterprise procedures
- Plant drawings and manufacturers manuals
- Introduction to and typical arrangements of power production plant
- Relevant plant and equipment, its location and operating parameters
- Interpersonal skills techniques
- Stakeholder management techniques
- Time management techniques
- Leadership techniques
- Liaising with contractors and clients
- Project management techniques
- Project planning techniques
- Leadership techniques
- Contract management
- Liaising with contractors and clients
- Maintenance strategy development techniques
- Measurement and analysis system and procedures
- Maintenance philosophies and work practices
- Physical properties and failure modes of materials
- Engineering principles and development processes
- Business plan objectives and principles of application
- Computer systems
- Quality assurance/quality control
- Risk management techniques
- Maintenance planning principles

T2 Specific skills needed to achieve the performance criteria:

- Relevant environmental, occupational health and safety legislation and regulations

REQUIRED SKILLS AND KNOWLEDGE

- Enterprise procedures
- Plant drawings and manufacturers manuals
- Introduction to and typical arrangements of power production plant
- Relevant plant and equipment, its location and operating parameters
- Relevant state and territory regulations
- Apply risk management principles
- Apply quality assurance/quality control principles
- Prioritise options and work
- Solve problems
- Communicate effectively
- Analyse relevant information
- Apply data analysis techniques and tools
- Produce maintenance strategies
- Apply business planning principles
- Produce maintenance schedules and plans.

Evidence Guide

EVIDENCE GUIDE

9) This provides essential advice for assessment of the competency standard unit and must be read in conjunction with the Performance Criteria and the range statement of the competency standard unit and the Training Package Assessment Guidelines. The Evidence Guide forms an integral part of this Competency Standard Unit and shall be used in conjunction with all components parts of this unit and, performed in accordance with the Assessment Guidelines of this Training Package.

Overview of Assessment

9.1)

Longitude 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's 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 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. Hence, sources of evidence need to be 'rich' in nature so as to minimise error in judgment. Activities associated with normal every day 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 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 pre-requisites 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 – UEP12". 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 6) of this unit
- Demonstrate an appropriate level of employability skills
 - Conduct work observing the relevant Anti Discrimination legislation, regulations, policies and workplace procedures
 - Demonstrated performance across a representative range of contexts from the prescribed items below:
 - Knowledge and application of relevant sections of:
Occupational Health and Safety legislation; Statutory legislation; Enterprise/site safety procedures;
Enterprise/site emergency procedures
 - Strategy development
 - Maintenance philosophies
 - Engineering principles
 - Risk management
 - Principles of planning
 - Dealing with an unplanned event by drawing on Essential Knowledge and Skills to provide appropriate solutions incorporated in the 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 competency standard unit.

Competency Standards should be assessed in the workplace or simulated workplace and under the normal range of workplace conditions.

Assessment of this unit will be supported with documentary evidence, by means of endorsement stating type and application of work.

In addition to the resources listed above in Context of assessment', evidence should show competency working, in limited spaces, with different types of plant and equipment as well as different structural/construction types and methods and in a variety of environments.

**Method of
assessment****9.4)**

This unit shall be assessed by methods given in Section 1.3.00 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 recommended concurrent assessments with this unit, however in some cases efficiencies may be gained in terms of learning and assessment effort being concurrently managed with allied competency standard units where listed
Nil

Range Statement

RANGE STATEMENT

10) This relates to the competency standard 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.

Generation production plant and equipment may include boiler, turbine, water, electrical, control and monitoring, ash and dust, water treatment and fuel plant (coal, oil, gas and water).

Strategies may target long, medium or short terms.

Budget may include costs for labour, materials, training, services, tools and equipment.

Reference information may include benchmarking reports, maintenance data, market requirements, plant budgets, business plans and risk assessment reports.

Communication may include liaison with customers such as plant owners and operating staff, maintenance staff and supervisors, professional risk analysts, external organisations and manufacturers.

Produced documents may include coordinated maintenance plans and/or strategies, maintenance scheduling documents, budgets, reports, submissions, cost benefit risk assessments and work plans and/or directives.

Preparation and implementation strategies may include use of the services of staff associated with maintenance and planning.

Power generation demands may include either long or short term prognosis.

Generic terms are used throughout this Training Package for vocational standard shall be regarded as part of the Range Statement in which competency is demonstrated. The definition of these and other terms are given in Section 2.1 Preliminary Information and Glossaries.

Unit Sector(s)

Not applicable.

Competency Field

Competency Field

11)

Operations.