Australian Government

Department of Education, Employment and Workplace Relations

UEPOPS425A Produce Maintenance Plans for Generation Production Plant

Release: 1

UEPOPS425A Produce Maintenance Plans for Generation Production Plant

Modification History

Not Applicable

Unit Descriptor

Unit Descriptor **1**)

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

Application of the Unit

Application of the Unit **3**)

This unit is intended to augment formally acquired competencies. It is suitable for employment-based programs under an approved contract of training.

License to practise **3.1**)

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.

Licensing/Regulatory Information

Not Applicable

Pre-Requisites

Prerequisite Unit(s) **2)**

Competencies **2.1)**

There are no prerequisite units.

Employability Skills Information

Refer to the Evidence Guide

Elements and Performance Criteria Pre-Content

5) Elements describe the essential outcomes of a unit of competency

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 maintenance	1.1 Work requirements are identified, scoped and clarified/confirmed with appropriate parties or by site inspection
	1.2 Occupational Health and Safety standards, statutory requirements, relevant Australian standards, codes of practice, manufacturers' specifications, environmental requirements and enterprise procedures are identified, applied and monitored throughout the work procedure.
	1.3 Resources required to satisfy the work plan are identified, obtained and inspected for compliance with the job specifications
	1.4 Relevant plans, drawings and texts are selected and interpreted in accordance with the work plan
	1.5 Maintenance is planned in detail including sequencing and prioritising and considerations

ELEMENT	PERFORMANCE CRITERIA	
		made, where appropriate, for the maintenance of plant security and capacity in accordance with system/site requirements
	1.6	Coordination requirements, including requests for isolations where appropriate, are resolved with others involved, affected or required by the work
	1.7	Potential hazards are identified and prevention and/or control measures are selected
	1.8	Plant operating/maintenance history, condition monitoring information, recent modifications and existing plant status are addressed in defining work scope
	1.9	Costing of work is undertaken and impact on budget is assessed
	1.10	Needs for operational testing and/or re-commissioning are identified
	1.11	Where appropriate, the teams and individuals roles and responsibilities within the team are identified and, where required, assist in the provision of the on-the-job training
2 Develop maintenance plan	2.1	Work scope is scheduled into a plan in accordance with established criteria
	2.2	Plant isolation and access requests are documented in accordance with enterprise requirements
	2.3	Plans are developed in conjunction with other affected groups in accordance with enterprise requirements
	2.4	Availability of resources is confirmed and documented in accordance with enterprise requirements
	2.5	Information relevant to work activities is attached to maintenance plan in accordance with enterprise requirements

ELEMENT	PERFORMANCE CRITERIA	
	2.6	Maintenance plan and associated information is documented and distributed to all affected staff in accordance with enterprise communication systems
	2.7	Maintenance methods are drafted in accordance with criteria developed in research
	2.8	Maintenance methods in a document formatted in accordance with enterprise requirements
	2.9	Methods are presented for review to relevant staff in accordance with enterprise requirements
3 Implement and monitor maintenance plan	3.1	Maintenance information is allocated to appropriate staff
	3.2	Feedback is sought on application/progress of maintenance methods and plans
	3.3	Maintenance methods and plans are modified to reflect feedback obtained
	3.4	Modification of method/plan is reviewed/ approved by relevant staff
	3.5	Amended/updated documentation is distributed to relevant staff in accordance with enterprise communication systems

Required Skills and Knowledge

REQUIRED SKILLS AND KNOWLEDGE

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

Evidence shall show that knowledge has been acquired producing maintenance plans for generation production plants.

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

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

REQUIRED SKILLS AND KNOWLEDGE

- Occupational Health and Safety standards;
- Relevant statutory requirements and codes of practice;
- Environmental requirements;
- Maintenance plan development;
- Plant and plant systems;
- Mechanical and electrical processes;
- Maintenance philosophies and work practices;
- Physical properties and failure modes of materials;
- Engineering principles and development processes;
- Strategic plan objectives and principles of application;
- Computer systems;
- Quality assurance/quality control;
- Risk management;
- Communication principles;
- Human resources management principles;
- Maintenance techniques, procedures and requirements;
- Re-commissioning and testing procedures

Specific skills needed to achieve the Performance Criteria:

- Apply Occupational Health and Safety standards;
- Apply relevant statutory requirements and codes of practice;
- Apply environmental requirements;
- Apply risk management and quality assurance/quality control principles;
- Prioritise options and work;
- Solve problems;
- Communicate effectively;
- Analyse relevant information;
- Apply data analysis techniques and tools;
- Produce maintenance plans;
- Apply maintenance planning principles;
- Manage human resources;
- Identify maintenance requirements.

Evidence Guide

EVIDENCE GUIDE

8) 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 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

8.1)

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 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.

EVIDENCE GUIDE

Sample assessment instruments are included in the Assessment Guidelines of this Training Package.

Critical aspects of evidence required to demonstrate competency in this unit

8.2)

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 - UEP06". Evidence shall also comprise:

- A representative body of Performance Criteria 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:

EVIDENCE GUIDE

- 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) Essential Knowledge and Associated Skills of this unit
- Demonstrate an appropriate level of skills enabling employment
- Conduct work observing the relevant Anti Discrimination legislation, regulations, polices and workplace procedure

- Demonstrated performance across a representative range of contexts from the prescribed items below:
  - The knowledge and application of relevant sections of: OHS legislation; Statutory legislation; Enterprise/site safety procedures; Enterprise/site emergency procedures.
  - Maintenance plan development
  - Maintenance philosophies
  - Engineering principles
  - Maintenance techniques
  - 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

8.3)

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.

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

EVIDENCE GUIDE

Assessment of this unit must 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

8.4)

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

8.5)

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

Key competencies

8.6)

Evidence that particular key competencies have been achieved within this unit is in the context of the following Performance Criteria of evidence. See Volume 2, Part 4 for an explanation of Key competencies and levels of this Training Package.

Key competencies	Example of Application	Performance Level
How are ideas and information communicated within this competency?	Refer to the following example of application: Explain ideas and actions, make suggestions for alternative actions and deal with contingencies and non-routine situations.	2

EVIDENCE GUIDE

How can information be collected, analysed and organised?	Refer to the following example of application: Information with regard to operations, faults and maintenance may be observed and monitored for analysis and organised into records and reports.	2
How are activities planned and organised?	Refer to the following example of application: Planning the required activity, to include co-ordination and use of equipment, materials and tools to avoid backtracking and rework.	2
How is team work used within this competency?	Refer to the following example of application: Coordinate activities of the team and provide appropriate support to other team members in completion of work tasks to meet the team's goals.	2
How are mathematical ideas and techniques used?	Refer to the following example of application: Calculation of time to complete routine projects, operations, tasks, estimation of distances, levels, loads and material requirements.	2
How are problem solving skills applied?	Refer to the following example of application: Determine solutions which focus on long and short-term resolution of work task problems.	2
How is use of technology applied?	Refer to the following example of application: Access, communicate, measure and provide information to monitor operations and performance of plant and equipment.	2

EVIDENCE GUIDE

Skills Enabling Employment **8.7**)

Evidence that competency in this unit incorporates skills enabling employment is in the context of the following performance. See Volume 2, Part 5 for definitions and an explanation of skills enabling employment.

Skills for Employment		**Example of Application**
1	Developing and using skills within a real workplace	Refer to the following example of application: Completion of tasks within an acceptable timeframe and performance with some supervision.
2	Learning to learn in the workplace	Refer to the following example of application: Comprehension and application of theoretical knowledge to well-developed skills.
3	Reflecting on the outcome and process of work task	Refer to the following example of application: Focused on improvement in own and other team member's performance in the workplace.
4	Interacting and understanding of the context of the work task	Refer to the following example of application: Working understanding of the processes and systems which apply to the workplace.
5	Planning and organising the meaningful work task	Refer to the following example of application: Achieving work tasks in a timely manner and ensuring that the work team achieves its stated work goals.
6	Performing the work task in non-routine or contingent situations	Refer to the following example of application: Seek advice and apply solutions to problems relevant to the workplace environment.

Range Statement

RANGE STATEMENT

7) 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, hydro, electrical, control and monitoring, ash and dust, water treatment and fuel plant.

Plans may include either, long, medium and short term.

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

Reference information may include benchmarking reports, maintenance data, market requirements, plant budgets, strategic plans and manufacturer specifications.

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

Produced documents may include maintenance reports.

Implementation plans may include use of the services of maintenance and planning staff.

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

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 Volume 2, Part 1.

Unit Sector(s)

Not Applicable

Literacy and numeracy skills

Literacy and numeracy skills **2.2)**

Participants are best equipped to achieve 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

Competency Field

Competency Field **4)**

Operations