



Australian Government

PPMEPG210 Monitor and control power generation system

Release: 2

PPMEPG210 Monitor and control power generation system

Modification History

Release	Comments
Release 2	This version released with PPM Pulp and Paper Manufacturing Training Package Version 2.0.
Release 1	This version released with PPM Pulp and Paper Manufacturing Training Package Version 1.0.

Application

This unit of competency describes the skills and knowledge required to operate, monitor and maintain power generation systems and record and report operating data.

The unit applies to production support operators who monitor and control power generation systems, in a pulp or paper manufacturing facility. This typically involves working in a facility with complex integrated equipment and continuous operations.

No licensing, legislative or certification requirements apply to this unit at the time of publication. Where the turbine equipment falls under the category for which a High Risk Work Licence is required, this unit should not be used and the appropriate unit should be sought.

Pre-requisite Unit

Nil

Unit Sector

Electrical power generation (EPG)

Elements and Performance Criteria

Elements	Performance Criteria
<i>Elements describe the essential outcomes.</i>	<i>Performance criteria describe the performance needed to demonstrate achievement of the element.</i>
1. Confirm operational status	1.1 Check production requirements at start of shift and carry out daily work activities in line with organisational safety and standard operating procedures (SOP) 1.2 Confirm power generation processes are within operational

Elements	Performance Criteria
<i>Elements describe the essential outcomes.</i>	<i>Performance criteria describe the performance needed to demonstrate achievement of the element.</i>
	specifications by observation and inspection 1.3 Maintain process supplies to meet production requirements 1.4 Record turbine performance in operational log 1.5 Communicate operational status to relevant personnel 1.6 Select, fit, use and maintain personal protective equipment according to job requirements and task to be undertaken
2. Monitor and control power generation plant operation	2.1 Confirm operational status by inspection and routine observation 2.2 Monitor and maintain continuing process supplies to meet production requirements 2.3 Measure turbine pressures, temperatures and flows, according to organisational procedures/SOPs, or manufacturer's recommendations 2.4 Adjust turbine and generation controls to maintain operation within specifications 2.5 Monitor and maintain power output demand and distribution system to meet production requirements
3. Record and report power generation performance	3.1 Record pressures, temperatures and flows 3.2 Record power generation processes and data in operating log 3.3 Record and report maintenance according to organisational procedures

Foundation Skills

This section describes those language, literacy, numeracy and employment skills that are essential for performance in this unit of competency but are not explicit in the performance criteria.

Skill	Description
Reading	Interpret workplace health and safety and SOP
Writing	Complete accurate basic records for power generation processes and maintenance requirements
Oral communication	Provide clear basic information about operational status of power generation plant

Skill	Description
Numeracy	- Interpret basic numerical settings on instruments and gauges involving pressures, flows and temperatures - Monitor, assess and interpret power generation data - Record basic numerical data for power generation performance
Get the work done	Use and assess sensory information (sight, sound, touch, smell, vibration, temperature) to adjust process to maximise safety and productivity

Unit Mapping Information

Code and title current version	Code and title previous version	Comments	Equivalence status
PPMEPG210 Monitor and control power generation system Release 2	PPMEPG210 Monitor and control power generation system Release 1	Performance criteria added, minor changes to knowledge evidence, minor change to licensing statement	Equivalent unit

Links

Companion Volumes, including Implementation Guides, are available at VETNet - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=12998f8d-d0ac-40bc-a69e-72a600d4fd93>

Assessment Requirements for PPMEPG210 Monitor and control power generation system

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Performance Evidence

An individual demonstrating competency must satisfy all of the elements and performance criteria of this unit. There must be evidence that the individual has:

- operated a power generation system at least twice in line with required enterprise intervals
- followed safe working practices when operating power generation system
- used electronic and other control systems to control equipment during operations
- communicated effectively, through written and verbal means, with others, in the work area when operating power generation system
- completed the following records for each of the above operational periods:
 - operating log
 - record of steam generation processes and maintenance requirements.

Knowledge Evidence

An individual must be able to demonstrate the knowledge required to perform the tasks outlined in the elements and performance criteria of this unit. This includes knowledge of:

- organisational procedures relevant to workplace health and safety with particular emphasis on:
 - use of personal protective equipment (PPE)
 - equipment lock out and isolation procedures
 - handling chemicals and hazardous substances, including spill and disposal guidelines
 - plant clearance requirements
 - emergency procedures and responses
 - job safety analysis documentation and processes
 - plant permit systems and processes
 - high risk load shifting licensing requirements where relevant

- major hazard facility requirements where relevant
- characteristics and dangers of heat and energy generated by power generation systems
- power generation plant layout
- purpose, features and operation of power generation and distribution systems, operating parameters and allowable variations
- operation and application of electronic and other control systems
- electrical isolation procedures
- principles of operation of transformers and circuit protection systems
- AC/DC generation principles
- electrical output control and regulation principles
- power factor characteristics and effects
- effect of steam quality on turbine operation
- data used to evaluate power generation system performance including:
 - heat levels
 - pressure levels
 - energy generation levels
 - heat build-up
 - system overload information
 - test outcomes for fuel
 - past performance records
- organisational procedures:
 - standard operating procedures (SOP) specific to power generation operations
 - communication reporting lines
 - recording and reporting power generation processes and maintenance requirements.

Assessment Conditions

Assessment of skills must take place under the following conditions:

- physical conditions:
 - a workplace or a productive environment that accurately reflects performance in a workplace
- resources, equipment and materials:
 - access to the full range of equipment involved in integrated continuous manufacturing of power generation systems in a pulp or paper manufacturing facility, including chemical products
 - high and low voltage transformers
 - steam or gas turbine driven alternators
 - switchboards
 - water systems and auxiliary plant
 - circuit breaker
 - AC/DC generation and distribution systems

- analogue and digital instrumentation
- PPE suitable for operating a power generation system
- specifications:
 - template operating log and documents for recording power generation processes and maintenance requirements
 - organisational workplace health and safety and SOP

Assessors of this unit must satisfy the requirements for assessors in applicable vocational education and training legislation, frameworks and/or standards.

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