



Australian Government

PPMEPG320 Manage a power generation system startup

Release: 2

PPMEPG320 Manage a power generation system startup

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 conduct pre-operational checks and bring a power generation system online.

The unit applies to production operators and technicians who manage power generation system startups, 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. Prepare system for operation	1.1 Identify production requirements to plan power generation levels 1.2 Determine power generation requirements in conjunction with power authorities

Elements	Performance Criteria
<i>Elements describe the essential outcomes.</i>	<i>Performance criteria describe the performance needed to demonstrate achievement of the element.</i>
	1.3 Determine sequencing for plant startup to suit current circumstances 1.4 Conduct system inspections and pre-startup safety checks in line with regulatory requirements, organisational safety and standard operating procedures (SOP) 1.5 Confirm plant status by observation and inspection 1.6 Complete routine maintenance to ensure optimum system performance 1.7 Select, fit, use and maintain personal protective equipment according to job requirements and task to be undertaken
2. Initiate system startup	2.1 Commence sequence for plant startup in line with work health and safety and SOP 2.2 Coordinate generation system start with distribution and ancillary systems and bring on-line 2.3 Observe system or plant for correct operational response 2.4 Detect deviations from operational specifications and rectify or report 2.5 Record system startup and power generation data in operating log

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 system startup processes and power generation performance
Numeracy	- Interpret basic numerical settings on instruments and gauges involving pressures, flows and temperatures - Monitor, assess and interpret system startup data - Record basic numerical data for system startup and power generation performance

Skill	Description
Get the work done	Use and assess sensory information (sight, sound, touch, smell, vibration, temperature) to adjust system operational parameters

Unit Mapping Information

Code and title current version	Code and title previous version	Comments	Equivalence status
PPMEPG320 Manage a power generation system startup Release 2	PPMEPG320 Manage a power generation system startup 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 PPMEPG320 Manage a power generation system startup

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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:

- identified production requirements and managed power generation startup at least twice in line with required enterprise intervals, to suit power generation levels over different operating periods
- completed pre-startup safety checks
- completed routine maintenance when preparing for system startup
- followed safe working practices when starting up a 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 starting up a power generation system
- recorded system startup processes and power generation performance data in the operating log on completion of each of the above system startups.

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
- local power authority regulations and reporting requirements for starting up 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
- operational tolerances of the turbine system and effects of operating outside these tolerances
- key features and purpose of the full range of processes involved in starting up power generation systems, including pre-startup safety checks
- pre-start limitations and run-up limitations
- methods used to test power systems and diagnose deviations from operational specifications
- organisational procedures:
 - standard operating procedures (SOP) specific to power generation system startup
 - communication reporting lines
 - recording and reporting startup processes and power generation performance.

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:
 - chemical products and systems
 - high and low voltage transformers
 - steam or gas turbine driven alternators
 - switchboards
 - water systems and auxiliary plant
 - circuit breakers
 - AC/DC generation and distribution systems
 - maintenance tools and equipment and consumables for power generation systems

- PPE suitable for starting up and operating power generation systems
- specifications:
 - local power authority regulations for starting up power generation systems
 - details of production requirements to plan power generation levels
 - template operating log for recording startup processes and power generation performance
 - organisational workplace health and safety and SOP for power generation system startup.

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

Links

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