



Australian Government

Assessment Requirements for PPMEPG301 Perform power generation operations

Release: 1

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Modification History

Release	Comments
Release 1	This version released with PPM Pulp and Paper Manufacturing Training Package Version 3.0.

Performance Evidence

An individual demonstrating competency must satisfy all of the elements and performance criteria in this unit.

There must be evidence that the individual has planned for, coordinated, and safely started up and shut down power generation operations for at least two operational intervals, including for each operational interval:

- determined and monitored process control points
- monitored, assessed causes and rectified system condition and unplanned shutdown
- used and interpreted electronic control systems during operations
- completed routine maintenance on plant
- applied safe use and handling of chemicals and materials
- recorded and reported accurate operational data
- communicated effectively and worked safely with others when undertaking power generation operations.

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:

- workplace and legislative health and safety requirements relevant to performing power generation operations, including emergency procedures, handling chemical and hazardous substances, high risk load shifting, licensing requirements, plant clearance and permit systems
- relevant workplace and legislative environmental sustainability requirements and practices for power generation operations, including workplace biotechnological applications and processes
- methods used to identify and manage hazards and risks that apply to power generation operations
- local power authority regulations and reporting requirements for power generation systems

- purpose, features and operation of power generation and distribution systems, operating parameters and allowable variations, including:
 - plant layout
 - 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
 - methods used to test power systems and diagnose deviations from operational specifications
 - types, uses and characteristics of materials and supplies for power generation operations
 - effect of process adjustments on productivity during operation
 - application of electronic and other control systems used to operate, control and make appropriate adjustments to power generation operations
 - causes of and responses used for unplanned shutdowns
- standard operating procedures specific to power generation operations
- procedures for communicating, recording and reporting for system operation, production outcomes and equipment faults.

Assessment Conditions

Assessment of the skills in this unit of competency must take place under the following conditions:

- physical conditions:
 - skills must be demonstrated in a manufacturing facility or an environment that accurately represents workplace conditions
- resources, equipment and materials:
 - power generation system that is either steam generated and produces power output of less than 500kW or uses gas fired turbine that produces power greater than 500kW
 - 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

- personal protective equipment required for operating power generation systems
- electronic control systems that include digital control system, touch screens or robotics used to control power generation system
- proforma or recording system for recording system and production data and information on power generation operations
- specifications:
 - workplace and standard operating procedures relating to power generation operations, including health and safety, risks and hazards identification, plant isolation, quality, housekeeping and environmental requirements
 - manufacturer specifications and maintenance schedules for power generation plant and system
 - local power authority regulations for starting up power generation systems
- relationships:
 - relevant personnel for the purposes of communicating information.

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

Links

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