



Australian Government

Department of Education, Employment and Workplace Relations

SUGPMPH3A Monitor a powerhouse

Revision Number: 1

SUGPMPH3A Monitor a powerhouse

Modification History

Not applicable.

Unit Descriptor

Unit descriptor

This is a Specialist unit. It covers the skills and knowledge required to operate and monitor one or more turbines with attached alternators, supplying factory power.

Application of the Unit

Not applicable.

Licensing/Regulatory Information

Not applicable.

Pre-Requisites

Not applicable.

Employability Skills Information

Not applicable.

Elements and Performance Criteria Pre-Content

Not applicable.

Elements and Performance Criteria

Element	Performance criteria
1. Prepare to operate the powerhouse	1.1 Personal protective clothing and equipment is selected and used 1.2 Run warm up sequence of turbines and alternator/s in preparation for handover from local powerhouse to powerhouse consul
2. Monitor powerhouse operation	2.1 Powerhouse output is monitored against site requirements 2.2 Equipment is monitored to confirm operating condition 2.3 The workplace meets housekeeping standards
3. Analyse and respond to abnormal performance	3.1 Operating data and plant operating conditions are analysed to identify causes of abnormal performance 3.2 Corrective action is taken in accordance with workplace procedures in response to OHS hazards and abnormal plant performance 3.3 Emergency procedures are implemented as required according to workplace procedures and manufacturer's recommendations
4. Handover powerhouse operation	4.1 Workplace records are maintained in accordance with statutory requirements and workplace procedures 4.2 Handover is carried out according to workplace procedure 4.3 Powerhouse operators are aware of powerhouse status and related equipment at completion of handover
5. Shutdown the powerhouse	5.1 The powerhouse is shut down according to workplace procedures and manufacturer's recommendations 5.2 The powerhouse is prepared for storage in shut down mode 5.3 Maintenance requirements are identified and reported

Required Skills and Knowledge

Not applicable.

Evidence Guide

Evidence guide

The assessment process must address all of the following items of evidence.

Ability to:

1. Access workplace information on power requirements
2. Select, fit and use personal protective clothing and/or equipment
3. Confirm that turbine/s and alternator/s are ready for warm up/operation
4. Conduct warm up sequence
5. Liaise with electrician as required to synchronise with external power supply
6. Handover control to operating consul
7. Liaise with other work areas to advise of powerhouse status
8. Demonstrate run up procedures in both manual and automatic modes
9. Monitor powerhouse operation. This typically includes monitoring:
 - bearing temperature
 - steam pressure
 - speeds
 - oil flows
 - power factor
 - voltage
 - power frequency
 - equipment condition including noise and vibration
10. Take corrective action in response to abnormal or unacceptable performance
11. Report and/or record corrective action as required
12. Demonstrate shift handover procedure and confirm that replacement operators are aware of equipment status and operating requirements prior to completing handover
13. Demonstrate emergency trip procedure and related re-start
14. Record operating information
15. Maintain work area to meet housekeeping standards

Knowledge of:

16. Relevant state OHS legislation, standards and codes of practice relating to work responsibilities
17. Safe work procedures including awareness of health and safety hazards related to powerhouse operation and associated control measures. Hazards typically include working around hot surfaces, manual handling, fuel and steam leaks
18. Hierarchy of hazard control measures
19. Purpose and limitations of protective clothing and equipment
20. Purpose and basic principles of power generation. This includes the impact of out of range frequency voltage on equipment operation
21. Site procedures for the import and export of power
22. Operating principles of powerhouse and instrumentation components, purpose and operation. This includes the requirement to bar over alternators on start up, shut down and emergency stops
23. Basic operating principles of process control where relevant. This includes the relationship between control panels and systems and the physical equipment
24. Layout of powerhouse including location of overload protection equipment/switches

25. Methods used to render equipment safe to inspect, maintain and/or clean including lock-out, tag-out and isolation procedures
26. Operating requirements and parameters
27. Procedures for responding to emergency situations. This includes safe shutdown procedure
28. Handover and long term shut down and storage procedures
29. Environmental issues and controls. This can include controlling oil spillages
30. Housekeeping standards for the work area
31. Reporting and recording systems. This includes both statutory and workplace requirements

May include:

32. Cleaning procedures

Relationship with other standards

Pre-requisite units

The pre-requisite for this competency standard is:

- SUGPOTB2A Operate a turbine

Co-assessment of related units

Other units of competency relevant to the work role should be assessed in conjunction with this unit.

Resources required for assessment

Assessment must occur in a real or simulated workplace where the assessee has access to:

- Turbine with an attached alternator
- Relevant codes and standards
- Operating procedures and related advice on equipment operation
- Personal protective clothing and equipment
- Communication systems and equipment
- Housekeeping standards and procedures

Assessment requirements

For information on how to assess this competency standard and who can assess, refer to the Assessment Guidelines for this Training Package.

Range Statement

Range statement

The range statement indicates the context for demonstrating competence. This statement is a guide and unless otherwise indicated, items may or may not apply as required by the work context.

- Work is carried out in accordance with company policies and procedures, manufacturer's recommendations, legislative requirements, codes of practice and industrial awards and agreements. Codes of practice may include the Sugar Milling Operations Industry Code of Practice
- Workplace information can include Standard Operating Procedures (SOPs) and manufacturer's specifications
- This role is typically carried out in liaison with an electrician

- This unit applies to both continuous and short term operation and requires demonstration of start up and shut down procedures after a prolonged break
- Equipment includes turbines with attached alternators
- Services may include steam, water, mill and instrumentation air and power
- Operation and monitoring of equipment and processes typically requires the use of control panels and systems
- Work may require the ability to work within a team environment
- Information systems may be print or instrumentation based
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Unit Sector(s)

Not applicable.