



Australian Government

PPMSTM201 Monitor and control boiler operations

Release: 1

PPMSTM201 Monitor and control boiler operations

Modification History

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

Application

This unit of competency describes the skills and knowledge required to monitor and control fire and water tube boilers, and record and report operating data to incoming operators.

The unit applies to production support operators who assist in unattended boiler operations, undertaking routine work in monitoring, identifying and solving predictable problems that occur with integrated equipment and continuous operations.

No licensing, legislative or certification requirements apply to this unit at the time of publication. This unit should not be used where the boiler equipment falls under the category for which a high risk work licence is required. Users are advised to check with the relevant regulatory authority for appropriate unit and licensing requirements.

Pre-requisite Unit

Nil

Unit Sector

Steam Generation (STM)

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 to monitor boiler operations	1.1 Check production requirements at start of shift and plan work activities according to workplace health and safety and standard operating procedures 1.2 Identify health and safety hazards and report safety concerns 1.3 Select and fit personal protective equipment according to safety requirements

Elements	Performance Criteria
<i>Elements describe the essential outcomes.</i>	<i>Performance criteria describe the performance needed to demonstrate achievement of the element.</i>
	1.4 Confirm combustion processes are within operational specifications by observation and inspection 1.5 Maintain process supplies to meet production requirements 1.6 Record boiler operational performance according to workplace requirements 1.7 Communicate operational status to relevant personnel
2. Undertake routine monitoring and control of boiler plant operations	2.1 Confirm operational status by inspection and routine observation 2.2 Test water quality and adjust chemical addition according to operating procedures 2.3 Complete and record fuel efficiency calculations 2.4 Adjust boiler controls to maintain operation within specifications 2.5 Monitor and test pre-treatment systems for water 2.6 Monitor and maintain steam pressure and steam distribution systems to meet production requirements 2.7 Complete routine preventative maintenance according to maintenance schedules
3. Record boiler performance and hand over boiler operations	3.1 Record steam generation processes and data according to workplace requirements 3.2 Record and report maintenance requirements 3.3 Brief incoming operators on status of boiler operations and equipment according to workplace 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 information in workplace procedures and maintenance schedules
Writing	Complete accurate basic records in the required format

Skill	Description
Oral communication	• Provide information about boiler operations using clear language and industry terminology
Numeracy	• Interpret steam generation data and basic numerical settings on instruments and gauges involving pressures, flows and temperatures • Complete routine calculations to measure ratios of boiler house chemicals and fuel efficiency • Record basic numerical data for fuel efficiency and steam generation

Unit Mapping Information

Code and title current version	Code and title previous version	Comments	Equivalence status
PPMSTM201 Monitor and control boiler operations	PPMSTM210 Monitor and control boiler operation	Minor unit title change Changes to elements, performance criteria, foundation skills, performance evidence and knowledge evidence Assessment conditions updated	Not equivalent

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 PPMSTM201 Monitor and control boiler operations

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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 undertaken routine monitoring and control of boiler operations for at least two operational intervals, including for each interval:

- completed the following types of tests:
 - low water level alarm
 - high water level alarm
 - low water level alarm lock-out
 - hydrostatic
 - burner management system
 - safety valve
- completed routine maintenance on boiler plant
- completed accurate records for the operation
- communicated clear information on boiler operation status for handover.

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 health and safety requirements and procedures for unattended boiler operations
- permits and licensing requirements for facility hazards and high risk plant and equipment relevant to unattended boiler operations
- workplace environmental sustainability requirements and practices for unattended boiler operations, including workplace biotechnological applications and processes
- characteristics and dangers of steam
- purpose, features and operation of fire and water tube boilers and associated fuel types and delivery systems

- purpose, features and operation of steam boiler plant, operating parameters and allowable variations for fire and water tube types
- operation and application of electronic and other control systems to control unattended boiler operations
- key features of the full range of processes involved in controlling unattended boiler operations
- methods used to maintain steam distribution systems
- boiler water treatment system and reasons for treatment
- data used to monitor boiler performance, including:
 - steam levels
 - pressure levels
 - generation levels
 - heat build-up
 - system overload information
 - test outcomes for water quality and chemicals
 - past performance records
- standard operating procedures specific to unattended boiler operations
- procedures for communicating, recording and reporting boiler operations, processes and 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 reflects performance in a workplace
- resources, equipment and materials:
 - a fire or water tube boiler
 - maintenance tools and equipment and consumables for boiler
 - electronic control systems, including digital control system, touch screens or robotics required to control boiler operations
 - personal protective equipment required for operating a boiler
 - proforma or recording system for recording data and information on unattended boiler operations
- specifications:
 - workplace and standard operating procedures relating to unattended boiler operations, including health and safety, risks and hazards identification, plant isolation, quality, housekeeping and environmental requirements
 - maintenance schedules for boiler
- 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

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