

**Modification history**

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

PPMSTM3XX	Perform steam boiler operations
<b>Application</b>	<p>This unit of competency describes the skills and knowledge required to prepare for, startup, stabilise and shut down systems for unattended steam boiler operations.</p> <p>This unit applies to production operators who perform unattended steam boiler operations in a pulp or paper manufacturing facility, and respond to contingencies that occur working with complex integrated equipment and continuous operations.</p> <p>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.</p>
<b>Prerequisite Unit</b>	Nil
<b>Unit Sector</b>	Steam generation (STM)

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 for unattended steam boiler operations	1.1 Identify production requirements and specifications to plan operations and processes 1.2 Identify work health and safety hazards, assess risks and determine control measures 1.3 Identify process control points according to production specifications 1.4 Confirm availability of process supplies 1.5 Select, fit and use personal protective equipment according to job requirements and task to be undertaken 1.6 Communicate production requirements and specifications, work health and safety and environmental requirements and operating procedures to relevant personnel
2. Inspect, startup and monitor boiler operations	2.1 Confirm plant status through inspections of plant and control systems and other information 2.2 Remove isolations according to operating procedures 2.3 Establish pre-light conditions according to production requirements and specifications 2.4 Conduct pre operational and safety checks on equipment according to work health and safety and operating procedures 2.5 Start boiler according to operating procedures 2.6 Monitor boiler condition during startup to detect abnormal conditions 2.7 Detect deviations from required operating conditions and rectify common faults or refer complex faults to specialist technician
3. Shut down, inspect and maintain boiler	3.1 Isolate and shut down boiler and ancillary plant according to work health and safety and operating procedures 1.2 Prepare boiler for inspection according to operating procedures 1.3 Establish condition of boiler to ensure safe removal of equipment 1.4 Inspect boiler and complete routine preventative maintenance 1.5 Clean boiler internally and externally according to environmental and housekeeping requirements

<b>Elements</b>	<b>Performance Criteria</b>
<i>Elements describe the essential outcomes.</i>	<i>Performance criteria describe the performance needed to demonstrate achievement of the element.</i>
4. Store boiler in shutdown mode	4.1 Establish storage time and condition of storage according to productivity and workplace requirements 4.2 Store boiler according to manufacturer specifications
5. Respond to unplanned or emergency shutdowns	5.1 Respond to unplanned faults and stoppages according to operating, emergency and workplace health and safety procedures 5.2 Complete shutdown and isolation according to operating procedures 5.3 Locate and rectify cause of unplanned shutdown within area of responsibility 5.4 Monitor and maintain continuing plant operation in safe working mode 5.5 Notify relevant personnel to rectify and make plant ready for restart
6. Record and report production information	6.1 Record production and boiler operation information according to workplace requirements 6.2 Report problems or variations with production and plant to relevant personnel

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<b>Foundation Skills</b>	
<i>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.</i>	
<b>Skill</b>	<b>Description</b>
Reading	<ul style="list-style-type: none"> <li>Interpret information from workplace procedures and documentation</li> </ul>
Writing	<ul style="list-style-type: none"> <li>Complete records accurately and legibly using clear language and industry terminology</li> </ul>
Oral communication	<ul style="list-style-type: none"> <li>Provide information about start up and shut down operations, problems or variations with production, quality and system using clear language and industry terminology</li> </ul>
Numeracy	<ul style="list-style-type: none"> <li>Interpret numerical settings on instruments, gauges and data recording equipment</li> <li>Use measuring equipment to calculate and measure materials and supplies</li> <li>Record numerical data for boiler and operational performance</li> </ul>

<b>Unit Mapping Information</b>			
<b>Code and title current version</b>	<b>Code and title previous version</b>	<b>Comments</b>	<b>Equivalence status</b>
PPMSTM3XX Perform steam boiler operations	PPMSTM320 Manage steam boiler startup	Merges two units. Changes to unit title, elements, performance criteria, foundation skills, performance and knowledge evidence. Assessment conditions updated.	Not equivalent
PPMSTM3XX Perform steam boiler operations	PPMSTM330 Shut down and bank steam boiler	Merges two units. Changes to unit title, elements, performance criteria, foundation skills, performance and knowledge evidence. Assessment conditions updated.	Not equivalent

<b>Links</b>	Companion Volumes, including Implementation Guides, are available at VETNet: <a href="https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=12998f8d-d0ac-40bc-a69e-72a600d4fd93">https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=12998f8d-d0ac-40bc-a69e-72a600d4fd93</a>
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<b>TITLE</b>	<b>Assessment requirements for PPMSTM3XX Perform steam boiler operations</b>
<b>Performance Evidence</b>	
<p>An individual demonstrating competency must satisfy all of the elements and performance criteria in this unit.</p> <p>There must be evidence that the individual has planned for, coordinated, and safely started up and shut down unattended steam boiler operations for at least two operational intervals, including for each operational interval:</p> <ul style="list-style-type: none"> <li>• determined and monitored process control points</li> <li>• monitored, assessed causes and rectified boiler condition and unplanned shutdown</li> <li>• used and interpreted electronic control systems during operations</li> <li>• applied safe use and handling of chemicals and materials</li> <li>• recorded and reported accurate operational data</li> <li>• communicated effectively and worked safely with others when undertaking unattended steam boiler operations.</li> </ul>	
<b>Knowledge Evidence</b>	
<p>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:</p> <ul style="list-style-type: none"> <li>• workplace and legislative health and safety requirements relevant to performing unattended steam boiler operations, including emergency procedures, handling chemical and hazardous substances, high risk load shifting, licensing requirements, plant clearance and permit systems</li> <li>• relevant workplace and legislative environmental sustainability requirements and practices for unattended steam boiler operations, including workplace biotechnological applications and processes</li> <li>• methods used to identify and manage hazards and risks that apply to unattended steam boiler operations</li> <li>• purpose, features and operation of fire and water tube boilers and associated fuel types and delivery systems</li> <li>• standard operating procedures specific to unattended steam boiler operations</li> <li>• types of, uses and characteristics of materials and supplies for unattended steam boiler operations</li> <li>• boiler water treatment system and reasons for treatment</li> <li>• methods used to monitor unattended steam boiler system operations against specified system parameters</li> <li>• effect of process adjustments on product quality and productivity during operation</li> <li>• application of electronic and other control systems used to operate, control and make appropriate adjustments to unattended steam boiler operations</li> <li>• purpose of, and processes for analysing stored boiler water and chemicals, particularly for boilers stored for extended periods</li> <li>• causes and responses used for unplanned shutdowns of unattended boilers</li> <li>• procedures for communicating, recording and reporting for system operation, production outcomes and equipment faults.</li> </ul>	
<b>Assessment Conditions</b>	
<p>Assessment of the skills in this unit of competency must take place under the following conditions:</p> <ul style="list-style-type: none"> <li>• physical conditions: <ul style="list-style-type: none"> <li>• skills must be demonstrated in a pulp or paper manufacturing facility or an environment that accurately represents workplace conditions</li> </ul> </li> <li>• resources, equipment and materials: <ul style="list-style-type: none"> <li>• a fire or water tube boiler</li> <li>• maintenance tools and equipment and consumables for unattended steam boiler</li> <li>• electronic control systems which include digital control system, touch screens or robotics used in unattended steam boiler systems</li> <li>• materials used in unattended steam boiler processes</li> <li>• personal protective equipment required for operating steam boiler</li> <li>• proforma or recording system for recording system and production data and information on unattended boiler operations</li> </ul> </li> </ul>	

<b>Assessment Conditions</b>
<ul style="list-style-type: none"><li>• specifications:<ul style="list-style-type: none"><li>• workplace and standard operating procedures relating to unattended steam boiler operations including health and safety, risks and hazards identification, plant isolation, quality, housekeeping and environmental requirements</li></ul></li><li>• relationships:<ul style="list-style-type: none"><li>• relevant personnel for the purposes of communicating information.</li></ul></li></ul> <p>Assessors of this unit must satisfy the requirements for assessors in applicable vocational education and training legislation, frameworks and/or standards.</p>

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