Modification history

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| Release | Comments |
| Release 1 | This version released with PPM Training Package Version 1.0. |

| PPMSTM440 | Troubleshoot and rectify boiler plant systems |
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| Application | This unit of competency describes the outcomes required to identify, diagnose, rectify and report faults in boiler plant systems, in the pulp and paper industry.  This unit applies to senior operators and production specialists who troubleshoot and rectify boiler plant systems, 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. |
| Prerequisite Unit | Nil |
| Unit Sector | Pulp and Paper Manufacturing (PPM) |

| Elements | Performance Criteria |
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| Elements describe the essential outcomes. | Performance criteria describe the performance needed to demonstrate achievement of the element. |
| 1. Identify and diagnose causes of faults | 1.1. Check and plan work within workplace health and safety (WHS) procedures, productivity requirements, risks and hazards identification, environmental workplace procedures and Standard Operating Procedures (SOP).  1.2. Interpret abnormal plant conditions and machine alarms to determine fault type and location.  1.3. Undertake physical inspections of plant, equipment and processes to identify faults.  1.4. Identify boiler type and locate cause and source of fault.  1.5. Isolate faulty plant, if possible, and confirm with production and maintenance.  1.6. Confirm diagnosis by access and reference to relevant historical data.  1.7. Communicate diagnosis to relevant personnel. |
| 2. Rectify faults | 2.1. Implement shutdown and isolation procedures.  2.2. Repair or replace faulty equipment.  2.3. Adjust process and systems to restore normal operations.  2.4. Communicate normal operations to relevant personnel. |
| 3. Record and report operational data | 3.1. Document troubleshooting process and responses to corrective actions, as required.  3.2. Document variations from standard specifications and boiler operating faults.  3.3. Communicate relevant information to appropriate personnel. |

| 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. | |
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| Skill | Description |
| Numeracy skills to: | * interpret instruments, gauges and data recording equipment * use measuring equipment and undertake calculations to aid troubleshooting. |
| Oral communication skills to: | * select and use appropriate spoken communication strategies with work colleagues and other personnel on site to to assist with analysis and resolution of operational problems and to manage troubleshooting and maintenance. |
| Reading skills to: | * read and interpret documentation, procedure manuals and customer orders relevant to boiler plant systems. |
| Writing skills to: | * record accurately and legibly, fault rectifications, using correct technical vocabulary. |
| Problem solving skills to: | * maintain situational awareness in the work area * analyse and use sensory information to adjust process to maintain and co-ordinate safety, quality and productivity. |
| Technology skills to: | * use electronic and other control systems to control equipment and processes * access, navigate and enter computer based information. |

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| Unit Mapping Information | | | |
| Code and title current version | Code and title previous version | Comments | Equivalence status |
| PPMSTM440 Troubleshoot and rectify boiler plant systems | FPPSTM440A Troubleshoot and rectify boiler plant systems |  | Equivalent unit |

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

| TITLE | Assessment requirements for PPMSTM440 Troubleshoot and rectify boiler plant systems |
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| Performance Evidence | |
| A person demonstrating competency in this unit must satisfy all of the elements and performance criteria of this unit, and must be able to provide evidence that they can:   * identify causes and effects of faults and corrective action on associated processes, at least twice in line with required enterprise intervals, for the boiler plant system in a pulp or paper manufacturing facility * identify system, quality and equipment faults within level of responsibility * implement isolation and access procedures * troubleshoot and rectify boiler plant systems * maintain a clean and hazard free work area * record and report on operational data * communicate effectively, through written and verbal means, the corrective actions undertaken. | |

| Knowledge Evidence |
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| A person competent in this unit must be able to demonstrate 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 * troubleshooting methods that can be applied across boiler plant system faults * implications of pre operational checks including low water level alarm, high water level alarm, low water level, alarm lockout, hydrostatic test, burner management system and safety valve test * documentation and procedures relevant to troubleshooting steam boiler operations, in the pulp and paper industry including: * appropriate boiler/pressure vessel operator certification * confined space standards and regulations * productivity requirements and quality procedures * environmental sustainability requirements and practices * machinery and plant manufacturing operating manuals * enterprise policies and procedures * manufacturer's specifications and maintenance documentation * Material Safety Data Sheets (MSDS) * operator's log and job sheets * incidents reports * steam generation system, processes and associated services sufficient to troubleshoot including plant layout, theory of operation, causes and effects of adjustments made to steam generation plant and processes and relationships between steam generation system, processes and associated services * the use of materials and supplies for boiler plant systems including chemicals, coal, oil, gas, additives, air, water, wood waste, steam recovery process products and power * key features of maintenance systems including operator level maintenance as per site agreements, operator maintenance schedules, maintenance suppliers and pro-active maintenance strategies * use of boiler water treatment system and reasons for treatment * use of electronic and other control systems, operation and application to make appropriate adjustments that control boiler plant operations |

| Assessment Conditions |
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| The following resources must be made available:   * access to the full range of equipment required for detecting and addressing faults associated with steam generation operations in a pulp or paper manufacturing facility * electronic control systems which includes Digital Control System (DCS), touch screens or robotics required for steam boiler operation * personal protective equipment suitable for troubleshooting steam boiler operations * applicable work health and safety (WHS) and isolation work place procedures, environmental guidelines and safe working requirements, risks and hazard identification and workplace housekeeping requirements * relevant personnel for the purposes of communicating information * sample workplace documentation, procedures and reports including Standard Operating Procedures (SOP), quality procedures, environmental sustainability requirements/practices, plant manufacturing operating manuals, enterprise policies and procedures, oil or chemical spills and disposal guidelines, plant isolation documentation, safe work documentation.   Competency is to be assessed in the workplace or in a productive environment that accurately reflects performance in a workplace.  Assessor requirements  Assessors must:   * hold the appropriate assessor competency standards as outlined in regulations; and * be able to demonstrate vocational competencies at least to the level being assessed; and * be able to demonstrate how they are continuing to develop their VET knowledge and skills as well as maintaining their industry currency and assessor competence. |

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