Modification history

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

| PPMWAS210 | Operate water systems |
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| Application | This unit of competency describes the outcomes required to check, monitor, operate and shutdown water systems, in a pulp or paper manufacturing facility.  The unit applies to production operators and technicians who start up monitor and operate water systems. This typically involves working in a facility with complex integrated equipment and continuous operations.  No licensing, legislative, regulatory, 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. Conduct local inspections and pre-operational safety checks | 1.1. Check plant and equipment in accordance with productivity requirements, workplace health and safety (WHS) requirements, environmental sustainability and safe working requirements and practices, Standard Operating Procedures (SOP), and housekeeping requirements.  1.2. Remove isolations.  1.3. Confirm availability of materials and supplies for water system.  1.4. Determine plant status and requirements.  1.5. Confirm sequencing for plant start up. |
| 2. Start up water systems | 2.1. Start up water system according to Standard Operating Procedures (SOP).  2.2. Observe the water system for correct startup operational response.  2.3. Detect startup variation conditions and take corrective action. |
| 3. Monitor and control water systems | 3.1. Monitor the operation of the water system through routine checks.  3.2. Take water samples and test to maintain quality, as required.  3.3. Identify variations from operational parameters.  3.4. Restore water system to standard operational parameters.  3.5. Conduct operator level maintenance, as required. |
| 4. Conduct a water system shutdown | 4.1. Confirm shutdown plan and communicate to relevant personnel.  4.2. Implement shutdown procedures.  4.3. Leave plant in a safe condition for isolation, as required. |
| 5. Respond to an unplanned shutdown | 5.1. Identify the cause of shutdown and action as required.  5.2. Complete sequence for shutdown of systems, in the plant.  5.3. Communicate action taken to relevant personnel.  5.4. Leave plant in a safe condition for isolation, as required. |
| 6. Record and report water systems information | 6.1. Record water systems information, as required.  6.2. Record problems and related action and communicate to relevant 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 |
| Writing skills to: | * record log sheet entries, incident reports and system faults * access, navigate and enter computer based information for operation of water systems |
| Oral communication skills to: | * select and use appropriate spoken communication strategies with work teams and other personnel on site, when operating water systems |
| Reading skills to: | * read and interpret documentation, procedures and reports |
| 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 |

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| Unit Mapping Information | | | |
| Code and title current version | Code and title previous version | Comments | Equivalence status |
| PPMWAS210 Operate water systems | FPPWAS210A Operate water 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 PPMWAS210 Operate water 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:   * inspect, start up and monitor water systems, at least twice in line with required enterprise intervals, and conduct required testing and sampling to maintain optimum production capacity * follow safe working practices when operating water systems * respond to planned and unplanned shutdowns with water systems * use electronic and other control systems to control equipment during operations * communicate effectively, through written and verbal means, with others, in the work area when operating water systems | |

| 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 * workplace documentation and procedures relevant to water systems, in the pulp and paper industry and covering: * Standard Operating Procedures (SOP) and housekeeping procedures for plant manufacturing, including confined space requirements * production instructions including maintenance logs, job sheets and operating logs * quality procedures and environmental sustainability requirements and practices * process for plant shutdowns and unplanned shutdowns * Material Safety Data Sheets (MSDS) * impact of different types of water sources including raw, mains or recycled water on water systems * appropriateness of sampling and testing checks for sludge consistency, pH, conductivity, flocculation, colour, suspended solids, caustic strength, alkalinity, impurities, brine, bacteria, colour and acid strength * operating parameters, variation and associated adjustments for water system, plant, processes, layout and associated services, sufficient to carry out startup and shutdown activities * required responses to all unplanned shutdowns, including power outage, mechanical breakdown, blockages, jamming, air supply and control system failure, to ensure safety quality and productivity * purpose, standards and procedures as per site agreements for sampling and testing process for plant and system operations, and process monitoring * implications of the use of water types including fresh water, treated water, de-mineralised water, softened water, filtrate-clarified water, potable water, dilution water (filtrate) ex-vacuum system waste water (effluent), white water (ex-machine) and cloudy water , on water systems * how to identify and respond to hazards and risks of water systems including: * confined space * biological hazards and environmental hazards * heat, height and slippery surfaces * pressures, fumes and electrical equipment * compressed air, nip points and flooding * 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 equipment and electronic and other control systems, operation and application to make appropriate adjustments that control the water system within level of responsibility * productivity requirements including energy efficiency, waste minimization, evaporation minimisation, including landfill and waste water reduction , consideration of resource utilisation, including fibre efficiency, minimising delays, chemical recovery maximization, line speed, and handovers * water systems including de-alkalinisation plant, de-mineralisation plant, water softening plant, chemical treatment plant, reverse osmosis plant, clarifier plant chillers, water storage systems, filtration systems, cooling towers, condensers and potable water plant * materials and supplies including chemicals and filtering mediums |

| Assessment Conditions |
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| The following resources must be made available:   * access to the full range of equipment required to operate water systems in a pulp or paper manufacturing facility * test and diagnostic equipment * personal protective equipment required for operating water systems * relevant personnel for the purposes of communicating information * template operating log and documents for recording operation of the water system and maintenance requirements * organisational workplace health and safety and standard operating procedures.   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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