

## MTMPS5604B Manage maintenance systems

Unit descriptor	This unit covers the skills and knowledge required to develop maintenance strategies which cause minimal disruption to plant operations and which are cost efficient. An enterprise's maintenance system influences the cost and quality of the product and the safety of the workforce and environment.
Employability Skills	The required outcomes described in this unit of competency contain applicable facets of Employability Skills. The Employability Skills Summary of the qualification in which this unit of competency is packaged, will assist in identifying Employability Skill requirements.
Application of the unit	At this level individuals exercise considerable responsibility and accountability within enterprise structures and are required to make primary contributions to the values, goals and operations of the enterprise. They will typically have responsibility for the establishment and review of systems for the site or department. They may work with the assistance of external experts to develop plans and strategies. This unit is particularly useful for maintenance managers, plant engineers and production managers working in a meat <i>industry context</i> .

### ELEMENT

Elements describe the essential outcomes of a Unit of Competency.

### PERFORMANCE CRITERIA

Performance Criteria describe the required performance needed to demonstrate achievement of the element. Where bold italicised text is used, further information is detailed in the Range Statement. Assessment of performance is to be consistent with the Evidence Guide.

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1	Prepare <i>maintenance</i> policies	1.1	Maintenance costs including the cost of poor maintenance procedures are identified and quantified.
		1.2	Management commitment to a productive maintenance strategy is negotiated and confirmed.
		1.3	Enterprise performance is benchmarked against agreed standards, and maintenance policies and priorities are developed.
		1.4	Maintenance system goals are developed through negotiation with <i>stakeholders</i> .
		1.5	Communication strategies are established to build positive workforce attitude and commitment to maintenance.

2	Implement maintenance management system	2.1	Resource requirements are identified, secured and included in enterprise budgets and operational plans.
		2.2	Location of the maintenance function and/or team within enterprise structures is determined.
		2.3	Profile of the maintenance function and/or team within enterprise structures is determined.
		2.4	Roles and responsibilities of equipment users and the <i>maintenance team</i> are clarified and built into position descriptions and work instructions.
		2.5	Mentoring and training in the use and care of technology and equipment is provided to support the maintenance strategy.
		2.6	Maintenance procedures and schedules are prepared to minimise negative impacts on production, costs, waste and the environment.
		2.7	Record-keeping systems are developed and maintained.
		2.8	Potential risks are analysed and management strategies recommended.
		2.9	Contingency plans are prepared in collaboration with the workforce, suppliers and customers.
		2.10	Maintenance schedules and procedures are effectively communicated to the team.
3	Monitor and review maintenance management system	3.1	Continuous improvement strategies are developed.
		3.2	Performance criteria for maintenance <i>goals</i> are determined and data collection strategies established.
		3.3	<i>Performance</i> information and outcomes are analysed and implications reported to stakeholders.

## REQUIRED SKILLS AND KNOWLEDGE

This describes the essential skills and knowledge required for this unit. Where bold italicised text is used, further information is detailed in the Range Statement.

- Apply relevant *communication* and *mathematical skills*.
- Consult with key personnel, people on the floor, delegates, suppliers, contractors and equipment manufacturers to determine appropriate maintenance strategies, procedures and schedules.
- Determine and recommend the need for capital expenditure for the replacement of plant and equipment.

- Develop ***maintenance policies*** and strategies. This includes establishing criteria for determining maintenance priorities and planning and scheduling routine equipment and overhead maintenance to meet quality system requirements.
- Develop secure record-keeping procedures to document maintenance costs, ***problems***, priorities, solutions, schedules and completions.
- Develop workforce commitment to effective maintenance strategies. This includes implementing strategies for ***devolving*** the identification of maintenance needs to the floor, developing consultative and cooperative ***problem-solving strategies***, negotiating changes in work practices.
- Establish and monitor performance targets for maintenance teams within performance planning and appraisal processes.
- Evaluate and recommend alternative maintenance policies and strategies. This includes evaluation of the costs and benefits of internal and consultant service models, changes in work roles and responsive/preventative models for maintenance.
- Identify and apply relevant ***OH&S, regulatory*** and ***workplace requirements***.
- Identify and describe maintenance issues related to the enterprise and their impact on the productivity of the plant.
- Identify cost elements in maintenance system costing and budgeting.
- Identify plant and equipment falling under the scope of the maintenance program. This may include steam generation systems, refrigeration systems, water and effluent systems and processing and production equipment, building, etc.
- Manage maintenance costs. This requires determining total maintenance costs based on ***maintenance service cost*** and ***machine breakdown cost***, setting, justifying, and achieving maintenance budgets.
- Monitor performance of the system. This includes establishing indicators, setting up data collection strategies, analysing data to identify trends and isolate problems or problem areas, and measuring progress against targets.
- Outline relevant legislation and regulations, for example food safety and food standards, and industrial agreements, and explain the implications for plant and equipment maintenance.
- Outline the costs resulting from poor maintenance and the benefits of a preventative maintenance system.
- Outline the ***impact of poor maintenance*** on meat safety, meat and/or product quality, occupational and environmental safety.
- Prepare and implement contingency plans for dealing with risks, including equipment breakdowns and failures. This will include negotiation and planning with production personnel.
- Present reports according to legal and enterprise requirements.
- Review maintenance strategies and goals within the enterprise, continuous improvement and planning processes.

## **RANGE STATEMENT**

The Range Statement relates to the Unit of Competency as a whole. It allows for different work environments within the meat industry and situations that may affect performance. This includes any essential operating conditions that may be present with training and assessment depending on the work situation, needs of the

candidate, accessibility of the item, and local industry and regional contexts. Bold italics wording in the Elements and Performance Criteria, and Required Skills and Knowledge, is detailed below.

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- Industry context*** includes:
- cost centres and departments operating semi-autonomously within guidelines of the parent enterprise or company, eg retail meat departments, boning rooms, food service and meat retail
  - domestic and export establishments
  - medium and large enterprises.
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***Maintenance*** may be preventative, responsive or routine.

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- Stakeholders*** may include:
- company owners, directors, shareholders, financiers
  - competitors
  - management and employees
  - suppliers, customers, consumers
  - unions and employer associations.
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***Maintenance teams*** may include engineers, boiler makers, plumbers and gas fitters, electricians, carpenters, labourers.

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- Maintenance system ***goals*** and ***performance*** indicators may include reductions in:
- backlogs
  - changes in attitude eg commitment to elimination of defects before they cause breakdowns, prevention, end to equipment abuse
  - costs
  - frequency of breakdowns
  - length of time out of action
  - roles or users of maintenance, problem-solving
  - time of repairs.
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- Communication*** may:
- be with culturally, ethnically and socially diverse individuals and groups
  - involve preparation of reports which may be complex, contain information from a range of technical sources and include mathematical and graphic information and data
  - occur in a variety of sensitive, conflictive, collaborative and supportive environments, may be formal or informal and involve face-to-face and technological or electronic methods
  - require analysis and presentation of complex concepts, technical information, mathematical information and other data in simple or complex formats
  - require persuasion, negotiation and assertiveness skills.
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***Mathematical skills*** may relate to complex actual and hypothetical, technical and financial

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modelling, calculations, interpretation and analysis. Mathematical information may be complex and relate to product and product quality, financial operations, personnel, operations, sales and turnover, exports, etc.

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- Maintenance policies** may include:
- preventative maintenance strategies such as:
    - replacing all parts of a certain type when one fails
    - replacing all parts after expected or average service life
    - servicing all equipment as per supplier recommendation and at fixed time intervals after average service life
  - responsive maintenance strategies such as:
    - defined maintenance priorities eg chain breakdowns, chillers overheating vs leaking taps
    - defined repair or service turn around times eg within two hours or days of maintenance report.
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- Maintenance **problems** may include:
- breakdowns in lifting equipment, corning vats, smokehouses
  - bug infested equipment eg water in lubrication systems and electrical boxes
  - faulty air knives
  - faulty thermostats in chillers, freezers, cool stores, display cabinets, hydraulic equipment
  - leaking taps, hoses, pipes
  - rust, peeling paint and surface coatings.
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- Devolution** strategies may include:
- encouraging work areas to prioritise maintenance within specified budget
  - including maintenance personnel in problem solving teams
  - linking responsive and preventative maintenance to safety requirements and committees
  - rewarding work area or team identification and achievement of maintenance targets.
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- Problem-solving strategies** may include:
- cross functional, problem-solving, process improvement or maintenance teams
  - suggestion boxes
  - tool box, consultative committee, maintenance meetings.
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- OH&S requirements** may include:
- enterprise OH&S policies, procedures and programs
  - OH&S legal requirements
  - Personal Protective Equipment (PPE) which may include:
    - coat and apron
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- ear plugs or muffs
  - eye and facial protection
  - head-wear
  - lifting assistance
  - mesh apron
  - protective boot covers
  - protective hand and arm covering
  - protective head and hair covering
  - uniforms
  - waterproof clothing
  - work, safety or waterproof footwear

- requirements set out in standards, codes of practice etc.
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***Regulatory requirements*** may include:

- animal welfare
  - commercial law including fair trading, trade practices
  - consumer law
  - corporate law including registration, licensing, financial reporting
  - environmental and waste management, sustainable work practices
  - equal opportunity, anti-discrimination and sexual harassment
  - Export Control Act
  - hygiene and sanitation requirements
  - industrial awards, agreements
  - relevant regulations
  - state regulations regarding meat processing
  - taxation.
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***Workplace requirements*** may include:

- enterprise-specific requirements
  - OH&S requirements
  - Quality Assurance requirements
  - Standard Operating Procedures
  - the ability to perform the task to production requirements
  - work instructions.
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***Maintenance service costs*** are costs associated with the maintenance service, including labour, the cost of parts and materials, maintenance facilities, equipment and tools, training, etc.

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***Machine breakdown costs*** are costs associated with the loss of production, including damaged or destroyed product, under used labour, wasted energy and utilities, loss of contract

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or contract penalties, reduced capacity, etc.

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**Impacts of poor maintenance** on meat safety and meat and product quality may include:

- contamination including physical (rust, dust, metal, moisture, etc) and microbiological
- damaged carcasses or product
- refrigeration breakdowns causing incorrect temperatures and chilling rates causing toughening, rancidity, weight loss, micro-contamination.

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## EVIDENCE GUIDE

The Evidence Guide provides advice on assessment and must be read in conjunction with the Performance Criteria, Required Skills and Knowledge, the Range Statement and the Assessment Guidelines for this Training Package.

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**Overview of assessment**

The meat industry has specific and clear requirements for evidence. A minimum of three forms of evidence is required to demonstrate competency in the meat industry. This is specifically designed to provide evidence that covers the demonstration in the workplace of all aspects of competency over time.

These requirements are in addition to the requirements for valid, current, authentic and sufficient evidence.

Three forms of evidence means three different kinds of evidence – not three pieces of the same kind. In practice it will mean that most of the unit is covered twice. This increases the legitimacy of the evidence.

All assessment must be conducted against Australian meat industry standards and regulations.

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**Critical aspects for assessment and evidence required to demonstrate competency in this unit**

Competency must be demonstrated through sustained performance over time, at an appropriate level of responsibility and authority under typical operating and production conditions for the enterprise.

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**Context of and specific resources for assessment**

Resources may include:

- a real work environment
- relevant documentation such as:
  - financial data relating to maintenance costs
  - manufacturer’s instructions or operations manuals
  - regulatory requirements
  - workplace policy and procedures
- relevant equipment and materials.

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**Method of assessment**

Recommended methods of assessment are:

- a third party referee report of sustained performance at

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appropriate level of authority and responsibility

- assignment focusing on understanding and application of principles and theory to workplace operations
- workplace projects with focus on company environment and conditions.

Assessment practices should take into account any relevant language or cultural issues related to Aboriginality, gender, or language backgrounds other than English. Language and literacy demands of the assessment task should not be higher than those of the work role.

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Guidance information for  
assessment

Resource materials available from MINTRAC, telephone  
1800 817 462.

Meat and Livestock Australia ([www.mla.com.au](http://www.mla.com.au)):

Energy Management Brochures (1998).

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