



Australian Government

Department of Education, Employment and Workplace Relations

MTMPS5604C Manage maintenance systems

Release: 1

MTMPS5604C Manage maintenance systems

Modification History

Not applicable.

Unit Descriptor

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.
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Application of the Unit

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 industry context.
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Licensing/Regulatory Information

Not Applicable

Pre-Requisites

Prerequisite units		

Employability Skills Information

Employability skills	This unit contains employability skills.
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Elements and Performance Criteria Pre-Content

Elements describe the essential outcomes of a unit of competency.	Performance criteria describe the performance needed to demonstrate achievement of the element. Where bold italicised text is used, further information is detailed in the required skills and knowledge section and the range statement. Assessment of performance is to be consistent with the evidence guide.
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Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA
1. Prepare <i>maintenance</i> policies	<p>1.1. Maintenance costs, including the cost of poor maintenance procedures, are identified and quantified.</p> <p>1.2. Management commitment to a productive maintenance strategy is negotiated and confirmed.</p> <p>1.3. Enterprise performance is benchmarked against agreed standards, and maintenance policies and priorities are developed.</p> <p>1.4. Maintenance system goals are developed through negotiation with <i>stakeholders</i>.</p> <p>1.5. Communication strategies are established to build positive workforce attitude and commitment to maintenance.</p>
2. Implement maintenance management system	<p>2.1. Resource requirements are identified, secured and included in enterprise budgets and operational plans.</p> <p>2.2. Location of the maintenance function and/or team within enterprise structures is determined.</p> <p>2.3. Profile of the maintenance function and/or team within enterprise structures is determined.</p> <p>2.4. Roles and responsibilities of equipment users and the maintenance team are clarified and built into position descriptions and work instructions.</p> <p>2.5. Mentoring and training in the use and care of technology and equipment is provided to support the maintenance strategy.</p> <p>2.6. Maintenance procedures and schedules are prepared to minimise negative impacts on production, costs, waste and the environment.</p> <p>2.7. Record keeping systems are developed and maintained.</p> <p>2.8. Potential risks are analysed and management strategies recommended.</p> <p>2.9. Contingency plans are prepared in collaboration with the workforce, suppliers and customers.</p> <p>2.10. Maintenance schedules and procedures are effectively communicated to the team.</p>
3. Monitor and review maintenance management system	<p>3.1. Continuous improvement strategies are developed.</p> <p>3.2. Performance criteria for maintenance goals are determined and data collection strategies established.</p> <p>3.3. Performance information and outcomes are analysed</p>

ELEMENT	PERFORMANCE CRITERIA
	and implications reported to stakeholders.

Required Skills and Knowledge

REQUIRED SKILLS AND KNOWLEDGE

This section describes the skills and knowledge required for this unit.

Required skills

Ability to:

- consult with key personnel, people on the floor, delegates, suppliers, contractors and equipment manufacturers to determine appropriate maintenance strategies, procedures and schedules
- develop *maintenance policies* and strategies, including establishing criteria for determining maintenance priorities and planning and scheduling routine equipment and overhead maintenance to meet quality system requirements
- establish and monitor performance targets for maintenance teams within performance planning and appraisal processes
- develop workforce commitment to effective maintenance strategies, including implementing strategies for *devolving* the identification of maintenance needs to the floor, developing consultative and cooperative *problem-solving strategies*, and negotiating changes in work practices
- develop secure record keeping procedures to document maintenance costs, *problems*, priorities, solutions, schedules and completions
- apply relevant *communication* and *mathematical skills*
- evaluate and recommend alternative maintenance policies and strategies, including evaluation of the costs and benefits of internal and consultant service models, changes in work roles and responsive/preventative models for maintenance
- determine and recommend the need for capital expenditure for the replacement of plant and equipment
- identify and apply relevant *Occupational Health and Safety (OH&S)*, *regulatory* and *workplace requirements*
- manage *maintenance costs*, including determining total maintenance costs based on maintenance service cost and machine breakdown cost, setting, justifying, and achieving maintenance budgets
- monitor performance of the system, including establishing indicators, setting up data collection strategies, analysing data to identify trends and isolate problems or problem areas, and measuring progress against targets
- prepare and implement contingency plans for dealing with risks, including equipment breakdowns and failures, including negotiation and planning with

REQUIRED SKILLS AND KNOWLEDGE

production personnel

- present reports according to legal and enterprise requirements
- review maintenance strategies and goals within the enterprise, continuous improvement and planning processes.

Required knowledge

Knowledge of:

- plant and equipment falling under the scope of the maintenance program, including steam generation systems, refrigeration systems, water and effluent systems, processing and production equipment, and building
- maintenance issues related to the enterprise and their impact on the productivity of the plant
- cost elements in maintenance system costing and budgeting
- relevant legislation and regulations (e.g. food safety and food standards), and industrial agreements, and explain the implications for plant and equipment maintenance
- costs resulting from poor maintenance and the benefits of a preventative maintenance system
- ***impacts of poor maintenance*** on meat safety, meat and/or product quality, occupational and environmental safety.

Evidence Guide

EVIDENCE GUIDE

The evidence guide provides advice on assessment and must be read in conjunction with the performance criteria, required skills and knowledge, range statement and the Assessment Guidelines for the Training Package.

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.

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.

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 instructions or operations manuals
 - regulatory requirements
 - workplace policy and procedures
- relevant equipment and materials.

Method of assessment

Recommended methods of assessment include:

- a third-party referee report of sustained performance at appropriate level of authority and responsibility
- assignment focusing on understanding and application of principles and theory to workplace

EVIDENCE GUIDE

	<p>operations</p> <ul style="list-style-type: none"> workplace projects with focus on company environment and conditions. <p>Assessment practices should take into account any relevant language or cultural issues related to Aboriginality or Torres Strait Islander, 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.</p>
Guidance information for assessment	A current list of resources for this unit of competency is available from MINTRAC www.mintrac.com.au or telephone 1800 817 462.

Range Statement**RANGE STATEMENT**

The range statement relates to the unit of competency as a whole. It allows for different work environments and situations that may affect performance. Bold italicised wording, if used in the performance criteria, is detailed below. 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) may also be included.

Maintenance may be:

- preventative
- responsive
- routine.

Maintenance system goals and performance indicators may include:

- reductions in backlogs
- changes in attitude (e.g. commitment to elimination of defects before they cause breakdowns, prevention, and end to equipment abuse)
- costs
- frequency of breakdowns
- length of time out of action
- roles or users of maintenance and problem solving
- time of repairs.

RANGE STATEMENT	
<i>Stakeholders</i> may include:	<ul style="list-style-type: none"> • company owners, directors, shareholders and financiers • competitors • management and employees • suppliers, customers and consumers • unions and employer associations.
<i>Maintenance teams</i> may include:	<ul style="list-style-type: none"> • engineers • boiler makers • plumbers and gas fitters • electricians • carpenters • labourers.
<i>Maintenance policies</i> may include:	<ul style="list-style-type: none"> • preventative maintenance strategies, such as: <ul style="list-style-type: none"> • replacing all parts of a certain type when one fails • replacing all parts after expected or average service life • servicing all equipment according to supplier recommendations and at fixed time intervals after average service life • responsive maintenance strategies, such as: <ul style="list-style-type: none"> • defined maintenance priorities (e.g. chain breakdowns, chillers overheating versus leaking taps) • defined repair or service turnaround times (e.g. within two hours or days of maintenance report).
<i>Devolution</i> strategies may include:	<ul style="list-style-type: none"> • 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.
<i>Problem-solving strategies</i> may include:	<ul style="list-style-type: none"> • cross functional, problem solving, process improvement or maintenance teams • suggestion boxes • tool boxes, consultative committees and maintenance meetings.

RANGE STATEMENT	
Maintenance <i>problems</i> may include:	<ul style="list-style-type: none"> • breakdowns in lifting equipment, corning vats and smokehouses • bug infested equipment (e.g. water in lubrication systems and electrical boxes) • faulty air knives • faulty thermostats in chillers, freezers, cool stores, display cabinets and hydraulic equipment • leaking taps, hoses and pipes • rust, peeling paint and surface coatings.
<i>Communication</i> may:	<ul style="list-style-type: none"> • 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 • 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.
<i>Mathematical skills</i> may relate to:	<ul style="list-style-type: none"> • technical and financial modelling • calculations • interpretation and analysis • complex actual and hypothetical mathematical information, such as: <ul style="list-style-type: none"> • product and product quality • financial operations • personnel • operations • sales and turnover • exports.
<i>OHS requirements</i> may include:	<ul style="list-style-type: none"> • enterprise OH&S policies, procedures and programs • OH&S legal requirements • Personal Protective Equipment (PPE) which

RANGE STATEMENT	
	<p>may include:</p> <ul style="list-style-type: none"> • coats and aprons • ear plugs or muffs • eye and facial protection • head-wear • lifting assistance • mesh aprons • 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 and codes of practice.
<i>Regulatory requirements</i> may include:	<ul style="list-style-type: none"> • animal welfare • commercial law, including fair trading and trade practices • consumer law • corporate law, including registration, licensing and financial reporting • environmental and waste management, and sustainable work practices • equal employment opportunity (EEO), anti-discrimination and sexual harassment • Export Control Act • hygiene and sanitation requirements • industrial awards and agreements • relevant regulations • state and territory regulations regarding meat processing • taxation • requirements set out in AS 4696:2007 Australian Standard for Hygienic Production and Transportation of Meat and Meat Products for Human Consumption.
<i>Workplace requirements</i> may include:	<ul style="list-style-type: none"> • enterprise-specific requirements • OH&S requirements • Quality Assurance (QA) requirements • Standard Operating Procedures (SOPs)

RANGE STATEMENT	
	<ul style="list-style-type: none"> the ability to perform the task to production requirements work instructions.
<i>Maintenance costs</i> include:	<ul style="list-style-type: none"> service costs: <ul style="list-style-type: none"> costs associated with the maintenance service, including labour the cost of parts and materials maintenance facilities equipment and tools training. breakdown costs: <ul style="list-style-type: none"> costs associated with the loss of production, including damaged or destroyed product under-used labour wasted energy and utilities loss of contract or contract penalties reduced capacity.
<i>Impacts of poor maintenance</i> on meat safety and meat and product quality may include:	<ul style="list-style-type: none"> contamination, including physical (e.g. rust, dust, metal and moisture) and microbiological damaged carcasses or product refrigeration breakdowns causing incorrect temperatures and chilling rates causing toughening, rancidity, weight loss and micro-contamination.

Unit Sector(s)

Unit sector	
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Co-requisite units

Co-requisite units	

Co-requisite units		

Competency field

Competency field	
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