



**Australian Government**

**Department of Education, Employment and Workplace Relations**

# **RTC4306A Supervise maintenance of machinery and equipment**

**Release: 1**

## **RTC4306A Supervise maintenance of machinery and equipment**

### **Modification History**

Not applicable.

### **Unit Descriptor**

This competency standard covers the functions involved in supervising the maintenance of property, machinery and equipment. It requires the application of skills and knowledge to develop and implement a maintenance plan which is cost efficient, and causes minimal disruption to enterprise operations. It involves determining and scheduling staff and resources and maintaining relevant legislative requirements, safe workplace and positive environmental practices. The work functions in this standard are likely to be carried out independently within enterprise guidelines.

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### **Application of the Unit**

Not applicable.

### **Licensing/Regulatory Information**

Not applicable.

### **Pre-Requisites**

Not applicable.

### **Employability Skills Information**

Not applicable.

### **Elements and Performance Criteria Pre-Content**

Not applicable.

## Elements and Performance Criteria

### Elements and Performance Criteria

Element	Performance Criteria
1 Prepare maintenance plan	<p>1.1 <b>Maintenance requirements</b> for property, machinery and equipment are identified from relevant <b>information sources</b>.</p> <p>1.2 Maintenance costs are identified and quantified.</p> <p>1.3 Maintenance requirements are checked against warranty, insurance agreements and indemnity provisions.</p> <p>1.4 <b>Maintenance plan</b> is developed to promote and sustain performance and production systems in line with <b>enterprise requirements</b>.</p> <p>1.5 Effective workplace communication strategies are established with regard to maintenance plan, <b>environmental and OHS policies</b>, and enterprise requirements.</p>
2 Implement maintenance plan	<p>2.1 <b>Resource and supply</b> requirements are identified, secured and included in enterprise budgets and operational considerations.</p> <p>2.2 Prepared maintenance schedules and procedures are effectively communicated to staff, contractors and suppliers to minimise negative impacts on production and costs.</p> <p>2.3 Maintenance plan is implemented and scheduled to minimise disruption to enterprise operations.</p> <p>2.4 Potential risks are assessed with regard to staff and supply problems, and contingency plans prepared accordingly.</p> <p>2.5 Machinery and equipment are operated to manufacturers specifications, OHS and enterprise requirements.</p>

- 3 Monitor maintenance plan
- 3.1 Maintenance activities and performance are monitored against maintenance plan for efficiency and effectiveness.
  - 3.2 Workplace **hazards** and environmental implications associated with maintenance procedures are monitored and controlled in line with OHS and enterprise requirements.
  - 3.3 Costs are monitored and controlled within enterprise budget requirements.
  - 3.4 **Relevant information** with regard to the maintenance plan is documented in accordance with enterprise requirements.
  - 3.5 Property, machinery and equipment are maintained in clean and safe operational conditions.

## Required Skills and Knowledge

Not applicable.

## Evidence Guide

### What evidence is required to demonstrate competence for this standard as a whole?

Competence in supervising maintenance requires the ability to supervise maintenance covering all components of planning, costing and scheduling. It requires the ability to determine planning priorities and maintain schedules, overseeing costs within budgets, determine staff roles and supervise a maintenance team, apply estimations and calculations with regard to time and costs of repairs, replacement and servicing procedures, recommend alternative strategies in the event of staff or supply problems, and monitor and maintain maintenance records. Evidence must also be demonstrated in the employment of safe and environmentally responsible workplace practices. The skills and knowledge required must be **transferable** to a different work environment. For example, if competence is evident in maintenance procedures conducted on machinery in a workshop context, it must also be evident in supervising maintenance on a different property, or different machinery and equipment.

**What specific knowledge is needed to achieve the performance criteria?**

Knowledge and understanding are essential to apply this standard in the workplace, to transfer the skills to other contexts and to deal with unplanned events. The knowledge requirements for this competency standard are listed below:

Types of maintenance requirements with regard to property, machinery and equipment.

Maintenance and servicing cycles for property, machinery and equipment.

Relevant State/Territory legislation, regulations and Codes of Practice with regard to workplace OHS and environmental protection requirements, and the use and control of hazardous substances.

Hazards and risks and respective control measures.

Training and instruction techniques for directing the learning of staff.

**What specific skills are needed to achieve the performance criteria?**

To achieve the performance criteria, appropriate literacy and numeracy levels as well as some complementary skills are required. These include the ability to:

Plan, cost and schedule maintenance requirements

Establish and monitor performance targets for maintenance team.

Maintain accurate record and report keeping procedures.

Monitor and assess performance of maintenance activities.

Interpret maintenance requirements from information sources.

Observe the emergence and supervise the removal of workplace hazards and risks.

Document plans and write reports.

Estimate and calculate resources requirements, machinery and servicing costings.

**What processes should be applied to this competency standard?**

There are a number of processes that are learnt throughout work and life, which are required in all jobs. They are fundamental processes and generally transferable to other work functions. Some of these are covered by the **key competencies**, although others may be added. The questions below highlight how these processes are applied in this competency standard. Following each question a number in brackets indicates the level to which the key competency needs to be demonstrated where 0 = not required, 1 = perform the process, 2 = perform and administer the process and 3 = perform, administer and design the process.

**1. How can communication of ideas and information (1) be applied?**

Ideas and information with regard to maintenance requirements and costings may be discussed with staff, contractors and suppliers.

**2. How can information be collected, analysed and organised (1)?**

Information with regard to the performance and outcomes of maintenance activities may be documented and organised by records.

**3. How are activities planned and**

Maintenance activities may be planned and coordinated with staff around enterprise

**organised (2)?**

operations.

4. How can **team work (1)** be applied?

Team work may be applied in the coordination of methods and procedures to monitor and conduct maintenance activities to achieve maintenance plan.

5. How can the use of **mathematical ideas and techniques (2)** be applied?

Mathematical techniques may be applied to estimate and calculate maintenance and repair costings within budgetary guidelines.

6. How can **problem-solving skills (2)** be applied?

Problems of staff, resources or supply may be planned for and prepared in a contingency plan to minimise disruption to work schedules.

7. How can the **use of technology (1)** be applied?

To access information, communicate, monitor, measure and record information with regard to maintenance activities and performance.

### **Are there other competency standards that could be assessed with this one?**

This competency standard **could** be assessed on its own or in combination with other competencies relevant to the job function.

There is essential information about **assessing this competency standard for consistent performance and where and how it may be assessed**, in the Assessment Guidelines for this Training Package. All users of these competency standards must have **access** to both the **Assessment Guidelines** and the relevant **Sector Booklet**.

## Range Statement

### Range of Variables

The Range of Variables explains the range of contexts within which the performance and knowledge requirements of this standard may be assessed. The scope of variables chosen in training and assessment may depend on the work situations available

<p>What factors may necessitate the <b>requirement for maintenance</b> procedures?</p>	<p>Wear, corrosion, design problems, equipment modifications, incorrect use and accidents, acts of nature.</p>
<p>What <b>information sources</b> may be consulted?</p>	<p>Operational diaries, staff comment and/or personal testing, observation of structures, machinery and equipment, manufacturers in-service updates, operator's manuals, property improvement groups, relevant government departments, other enterprise operators, contractors and service representatives.</p>
<p>What might be included in a <b>maintenance plan</b>?</p>	<p>Maintenance activities and schedules, maintenance costs and budget details, staff, resource and supply requirements, staff roles and responsibilities, contingency plan for staff and supply problems, reporting requirements, hazard and risk control measures, OHS procedures, personal protective clothing and equipment requirements, and environmental impact control measures.</p>
<p>What <b>enterprise requirements</b> may be applicable to this standard?</p>	<p>Standard Operating Procedures (SOP), industry standards, production schedules, Material Safety Data Sheets (MSDS), legislative and licensing requirements, work notes, product labels, manufacturers specifications, operator's manuals, enterprise policies and procedures (including waste disposal, recycling and re-use guidelines), and OHS procedures.</p>
<p>What environmental impacts may be addressed in enterprise <b>environmental</b> policies?</p>	<p>Environmental impacts resulting from excessive noise and exhaust emissions, damage to native vegetation and animals, the unsafe use and disposal of maintenance debris (oil containers, chemical residues), and hazardous substances (fuel, oils). It may also include dust problems, soil</p>



disturbance and increased run-off flows from machinery use and unsafe cleaning and servicing activities.

What **OHS requirements** may be relevant to this standard?

Systems and procedures for the safe maintenance of property, machinery and equipment including hydraulics and exposed moving parts. Hazard and risk assessment of workplace and maintenance activities and control measures. Safe lifting, carrying and handling techniques including manual handling, and the handling and storage of hazardous substances. The appropriate use, maintenance and storage of personal protective clothing and equipment which may include overalls, gloves, eye and hearing protection, respirator or face mask and boots. Safe systems and procedures for outdoor work including protection from solar radiation, fall protection, confined space entry, the protection of people in the workplace, and the appropriate workplace provision of first aid kits and fire extinguishers.

What may be included in **resource and supply** provisions?

Machinery, equipment and materials including welders (arc, gas and MIG), lathes, bench presses, multimeters and ohm meters, inspection pits, lifting and support equipment (jacks, overhead gantry, blocks), power tools (grinders, drills), hand tools (spanners, hammers, screw drivers). Workshop storage requirements may include racks for commonly used steel angle, rods, tube metal, wire, racks or boards for orderly placement of tools.

What **hazards** may be encountered in the workplace?

Exposure to loud noise and fumes, solar radiation, dust, mechanical vibration, and hazardous substances (fuel, oils), hazardous atmosphere, oil and grease spills, the presence of bystanders, livestock and wildlife in the workplace, adverse weather conditions, electricity, powerlines, mechanical malfunctions and other machinery including hydraulics and exposed moving parts.

What **relevant information** may be

This may include maintenance performance,

documented?

costs, problems, priorities, solutions,  
schedules and completed work.

For more information on contexts, environment and variables for training and assessment, refer to the Sector Booklet.

## **Unit Sector(s)**

Not applicable.