



Australian Government

Department of Education, Employment and Workplace Relations

ICPSU389C Undertake basic root cause analysis

Revision Number: 1

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Modification History

Not applicable.

Unit Descriptor

Unit descriptor	This unit describes the performance outcomes, skills and knowledge required to contribute to an advanced maintenance strategy; competitive manufacturers rely on the use of root cause analysis (RCA) by all personnel.
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Application of the Unit

Application of the unit	In a typical scenario, the employee works in an organisation which is applying competitive manufacturing strategies. This involves the operator in "owning" their process, taking responsibility for it, undertaking basic root cause analysis of problems and generally contributing to increasing the up time and general overall equipment efficiency (OEE). This competency comes from the Competitive Manufacturing Initiative group of competency standards.
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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. Recognise problems	1.1. Equipment/plant condition is monitored according to enterprise procedures 1.2. Product is monitored against quality standards and job specifications 1.3. Conditions/product characteristics indicative of a problem are identified 1.4. An existing work-based problem and/or practice is recognised
2. Implement quick fix	2.1. The immediate problem is controlled/contained 2.2. A quick fix is recommended/implemented within the scope of competency and authority
3. Determine root cause	3.1. A range of possible causes is identified 3.2. Information is gathered to eliminate/confirm causes 3.3. Assistance is sought as required according to level of responsibility and personal capabilities 3.4. Root cause is identified based on examination of the above
4. Develop permanent solution	4.1. A range of methods of eliminating the root cause/breaking the cause tree is identified 4.2. The most appropriate solution is selected based on machinery capabilities, material requirements and job schedules 4.3. Relevant people are liaised with to confirm decision, if required 4.4. Solution is recommend/implemented within the limits of competency and authority 4.5. Implementation is monitored and improvements are made as required

Required Skills and Knowledge

Required skills

- OHS in relation to operating machinery such as safely switching off machinery before cleaning is started
- communication of ideas and information by liaising with relevant people to confirm decision
- collecting, analysing and organising information by monitoring implementation and making improvements
- planning and organising activities by monitoring implementation and making improvements
- teamwork when seeking assistance as required according to level of responsibility and personal capabilities
- mathematical ideas and techniques by gathering information to eliminate/confirm causes
- problem-solving skills by selecting the most appropriate solution based on machinery capabilities, material requirements and job schedules
- use of technology by utilising equipment and tools to analyse capabilities

Required knowledge

- analysis
- problem solving
- communication
- documenting
- root cause analysis methodology
- indicators of a problem
- principles of the process sufficient to undertake a RCA and propose solutions
- use of relevant analysis tools (cause/effect diagrams, Pareto Charts, 4W)

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	
Critical aspects for assessment and evidence required to demonstrate competency in this unit	Evidence of the ability to: - the competent operator will be able to recognise problems in their process and undertake a root cause analysis, either alone or with assistance, and propose permanent solutions. Evidence of root cause analyses undertaken should be available - generally a range of RCA activities will be required in order to generate sufficient evidence.
Context of and specific resources for assessment	Assessment must ensure: - assessment will need to occur in an organisation implementing root cause analysis or by simulation or project - access to an organisation using RCA.
Method of assessment	A range of assessment methods should be used to assess practical skills and knowledge. The following examples are appropriate for this unit: direct questioning combined with review of portfolios of evidence and third party workplace reports of on-the-job performance by the candidate.
Guidance information for assessment	Holistic assessment with other units relevant to the industry sector, workplace and job role is recommended, for example: - ICPSU458C Monitor production workflow - ICPSU482C Troubleshoot and optimise materials and machinery.

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.

Quick fix may include:	not all situations can wait for the root cause analysis and eventual elimination of the root cause as there are serious current impacts. The quick fix will control these immediate impacts, but does not eliminate the root cause. The quick fix is sometimes referred to as the "quick and dirty" solution.
Root cause may include:	there are many possible causes of any problem. Eliminating some causes will have no impact, eliminating others will ameliorate the problem. However elimination of the root cause will eliminate the problem. There should only be one root cause for any problem and so the analysis should continue until this one cause is found. Elimination of the root cause permanently eliminates the problem.
Cause tree may include:	the series of causes is referred to as the cause tree. Not all root causes are accessible and able to be eliminated. Breaking the cause tree in such a way that the problem cannot recur is an acceptable alternative.
Uptime may include:	uptime refers to the overall availability of the plant - it is the inverse of downtime or the unavailability of the plant. Ideal uptime is 100%.
Overall equipment efficiency (OEE) may include:	- the combination of the main factors causing loss of productive capacity from equipment/plant and where: - availability takes into account losses due to breakdown, set up and adjustments - performance takes into account losses due to minor stoppages, reduced speed and idling - quality rate takes into account losses due to rejects, reworks and start up waste.

Unit Sector(s)

Unit sector	
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Competency field

Competency field	Support
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Co-requisite units

Co-requisite units		