Australian Government

Department of Education, Employment and Workplace Relations

MEM234026A Develop and coordinate engineering-related contingency plans

Release: 1

MEM234026A Develop and coordinate engineering-related contingency plans

Modification History

New unit

Unit Descriptor

This unit of competency covers the skills required to develop and coordinate contingency plans for engineering projects or operations that provide for recovery from a major incident or non-conformance.

Application of the Unit

This unit applies to contingency planning for engineering-related projects or operations across all forms of manufacturing and engineering. Activities covered include systematic analysis of the engineering activity to identify major contingencies, developing appropriate responses and coordinating the implementation of contingency plans into operations. It embraces personal and electronic communication, self-directed and group activities, business planning, employee briefing and training, project or operations planning and scheduling, and an understanding of the technology, skills, techniques and quality requirements of the project or operations.

This unit does not cover the planning required to contain/remediate an emergency non-conformance, such as a fire or explosion. Relevant emergency management skills from other Training Packages should be accessed for these skills.

Licensing/Regulatory Information

Not applicable.

Pre-Requisites

Not applicable.

Employability Skills Information

This unit contains employability skills.

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.

Elements and Performance Criteria

1	Establish contingency plan task	1.1	Review existing technologies, processes, standards and procedures
		1.2	Clarify contingency plan objectives and scope with client
		1.3	Prepare task schedules and requirements for development of contingency plans
		1.4	Establish contingency planning team, if required, and assign responsibilities within the team
2	Conduct impact assessment	2.1	Prepare comprehensive list of potential incidents
		2.2	Rate each potential incident for impact severity level
		2.3	Identify which incidents will be included in plan
3	Develop contingency plan	3.1	Formulate an action plan to deal with each significant risk
		3.2	Ensure occupational health and safety (OHS) requirements, codes of practice, regulations, standards and other regulatory requirements and enterprise procedures are included
		3.3	Determine resources required to support plans
		3.4	Assign responsibility for each planned action
		3.5	Determine costs associated in planned responses
		3.6	Determine trigger points for planned responses

		3.7	Review plan proposals and costs with client and stakeholders to obtain sign-off, and adjust plan, as required
4	Implement and maintain the plan	4.1	Finalise planning, including ensuring preparation of all required documentation, drawings, specifications and instructions
		4.2	Communicate the plan with all personnel who have a role in implementing the contingency plan
		4.3	Generate standard procedures to ensure plan is maintained and updated following any change in the project or operations

Required Skills and Knowledge

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

Required skills

Required skills include:

- assessing engineering-related technologies and operations for contingency risks and significance, including relevant engineering, production and financial calculations and analysis
- evaluating solutions for feasibility against engineering design or specification criteria, including relevant engineering calculations and analysis
- performing responsibilities in priority order
- using and validating performance analysis, modelling and simulation software for contingency-related analyses
- delegating roles, responsibilities and levels of authority, as appropriate, to team members
- communicating, negotiating and reviewing with stakeholders and team members throughout project and operation duration

Required knowledge

Required knowledge includes:

- context of operations or project, such as competitive pressures or markets, customer-supplier relationships, regulatory and industrial environment, resourcing and labour issues
- engineering-related modelling and simulation software, including underpinning program and software validation techniques
- budget and control measures for project or operations management from the financial business plan
- physical resources for project or operations
- human resources and skills development techniques and requirements for engineering-related projects
- recording and implementation requirements for engineering projects or operations, such as, schedules, budgets, personnel and resource allocations, and standard operating procedures, including maintenance procedures
- tendering and contracts requirements and processes, including agreement on engineering design and technical specification, negotiations and optimisations, provisions for variations, delays and penalties
- requirements for, and functions of, technical documentation, graphics and specifications and records of meetings, communications, negotiations, decisions and agreements with stakeholders
- systems thinking, contingency and constraints management

- typical management accounting processes which may relate to an engineering project or operation, such as:
  - cash flow and liquidity
  - assets and liabilities
  - costing and break-even analysis
  - financial record keeping procedures for expenditures
- typical legal requirements for engineering-related projects or operations
- OHS requirements, codes of practice, regulations, standards, regulatory requirements for project or operations, current safe work methods statements, material safety data sheets (MSDS) and work permits
- work organisation and management theory
- conflict resolution, problem solving and decision making

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.

Critical aspects for assessment and evidence required to demonstrate competency in this unit	Assessors must be satisfied that the candidate can competently and consistently: • identify and establish risks and consequences for the project or operation • establish resources required, including labour, materials, and equipment within budgets and procedures • establish support team and responsibilities • overcome constraints to achievement of schedules and budgets as contained in contingency plan • undertake appropriate internal and external reporting • manage continuous improvement.
Context of and specific resources for assessment	• This unit may be assessed on the job, or a combination of both on and off the job assessment based on appropriate project and simulation activities. Where assessment occurs off the job, that is, the candidate is not in productive work, then a simulated working environment must be used where the range of conditions reflects realistic workplace situations. The competencies covered by this unit would be demonstrated by an individual working alone or as part of a team. • Where applicable, reasonable adjustment must be made to work environments and training situations to accommodate ethnicity, age, gender, demographics and disability.

	• Access must be provided to appropriate learning and/or assessment support when required. Where applicable, physical resources should include equipment modified for people with disabilities.

Method of assessment	• Assessment must satisfy the endorsed Assessment Guidelines of the MEM05 Metal and Engineering Training Package. • Assessment methods must confirm consistency and accuracy of performance (over time and in a range of workplace relevant contexts) together with application of underpinning knowledge. • Assessment methods must be by direct observation of tasks and include questioning on underpinning knowledge to ensure its correct interpretation and application. • Assessment may be applied under project-related conditions (real or simulated) and require evidence of process. • Assessment must confirm a reasonable inference that competency is able not only to be satisfied under the particular circumstance, but is able to be transferred to other circumstances. • Assessment may be in conjunction with assessment of other units of competency where required.
Guidance information for assessment	Assessment processes and techniques must be culturally appropriate and appropriate to the language and literacy capacity of the candidate and the work being performed.

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.

A major incident or non-conformance	A major incident or non-conformance may include: • power, fuel energy failure or shortage • breakdown of critical plant or equipment • loss of key personnel • material supply shortages • safety issues • product liability issues • substantial material price increase
Action plans	Action plans may include the use of: • substitute materials and components • alternate processing

	• alternate approved supply sources • rationing of materials in short supply • external sources of labour • expert technical sources
OHS requirements, codes of practice, regulations, standards and other regulatory requirements and enterprise procedures	**OHS requirements, codes of practice, regulations, standards and other regulatory requirements and enterprise procedures** may include: • OHS Acts and regulations • relevant standards • industry codes of practice • risk assessments • registration requirements • safe work practices • state and territory regulatory requirements
Appropriate modelling and analysis software	Appropriate modelling and analysis software may include: • project tracking • financial modelling, analysis and tracking • process modelling and analysis • engineering simulation and modelling • manufacturing operation simulation
Existing technologies, processes, standards and procedures	**Existing technologies, processes, standards and procedures** may include: • standard operating procedures, including maintenance procedures • records of operations, including tenders, contracts, schedules, personnel, resource allocations and financial management procedures • documentation and records of current safe work methods statements, MSDS, work permits, standards and codes of practice
Legislative requirements	Legislative requirements may include: • industrial law and awards • customer protection law • restrictive trade practice • environmental protection • workers compensation • equal opportunity and anti-discrimination

Unit Sector(s)

Engineering practice

Custom Content Section

Not applicable.