



Australian Government

Department of Education, Employment and Workplace Relations

RIIBEF401A Manage non-routine, complex technical situations

Release: 1

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Modification History

Not applicable.

Unit Descriptor

This unit covers the management of non-routine, complex technical situations in the resources and infrastructure industries. It includes collecting and analysing information, diagnosing and solving complex problems, managing non-routine, complex technical operations and using technology effectively. Licensing, legislative, regulatory and certification requirements that apply to this unit can vary between states, territories, and industry sectors. Relevant information must be sourced prior to application of the unit.

Application of the Unit

This unit is appropriate for those working in a supervisory role or as a technical specialist, at worksites within:

- Civil construction
- Coal mining
- Drilling
- Extractive industries
- Metalliferous mining

Licensing/Regulatory Information

Refer to Unit Descriptor.

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.
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Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA
1. Collect and analyse information	1.1. Access, interpret and apply <i>compliance documentation</i> relevant to the work activity 1.2. Anticipate <i>problems</i> by constantly monitoring and analysing all available information 1.3. Identify operational problems promptly and consider from an operational and client perspective 1.4. Assess information for relevance and applicability 1.5. Access other sources of <i>information</i> to assist in problem solving
2. Diagnose and solve complex problems	2.1. Diagnose actual problem using all available information 2.2. Determine a range of possible solutions from extensive knowledge and experience 2.3. Communicate diagnostic parameters to senior management 2.4. Analyse problems for any long term impact and assess potential solutions 2.5. Decide most appropriate action 2.6. Carry out calculations necessary to implement action 2.7. Implement action to resolve the immediate problem 2.8. Monitor effectiveness of action 2.9. Feed results of action taken through to supervisors and management
3. Manage <i>non-routine</i> /complex technical operations	3.1. Apply a <i>depth and breadth of knowledge and experience</i> to all operations 3.2. Recognise and anticipate potential problems in both routine and <i>non-routine and complex technical operations</i> , and implement contingency planning 3.3. Adapt to client paperwork and record keeping forms and document unusual requests 3.4. Work independently of management 3.5. Take responsibility for decision-making processes on the job

	3.6. Prepare necessary reports for a range of relevant topics
4. Use technology effectively	<p>4.1. Use well developed physical and sensory skills to operate equipment to fullest capacity and anticipate potential problems</p> <p>4.2. Apply scientific and technological principles to evaluate and reshape operational procedures</p>

Required Skills and Knowledge

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

Required skills

Specific skills are required to achieve the Performance Criteria of this unit, particularly for its application in the various circumstances in which this unit may be used. This includes the ability to carry out or possess the following, as required to manage non-routine, complex situations:

- apply legislative, organisation and site requirements and procedures for managing non-routine, complex situations
- reading and writing skills, to research problems and write reports
- mathematical skills to carry out technical problem solving
- plant diagnostic skills

Required knowledge

Specific knowledge is required to achieve the Performance Criteria of this unit, particularly for its application in the various circumstances in which this unit may be used. This includes knowledge of the following, as required to manage non-routine, complex situations:

- communications systems, processes and procedures
- high level mathematical skills
- problem solving techniques and decision making
- extensive operational knowledge

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	<p>The evidence required to demonstrate competency in this unit must be relevant to worksite operations and satisfy all of the requirements of the performance criteria, required skills and knowledge and the range statement of this unit and include evidence of the following:</p> <ul style="list-style-type: none"> • knowledge of the requirements, procedures and instructions for managing non-routine, complex technical situations • implementation of requirements, procedures and techniques for the safe, effective and efficient management of non-routine, complex technical situations • working with others to plan, prepare and manage non-routine, complex technical situations • evidence of the consistent successful management of non-routine, complex technical situations
Context of and specific resources for assessment	<ul style="list-style-type: none"> • This unit must be assessed in the context of the work environment. Where personal safety or environmental damage are limiting factors, assessment may occur in a simulated environment provided it is realistic and sufficiently rigorous to cover all aspects of workplace performance, including task skills, task management skills, contingency management skills and job role environment skills. • Assessment of this competency requires typical resources normally used in a resources and infrastructure sector environment. Selection and use of resources for particular worksites may differ due to the site circumstances. • The assessment environment should not disadvantage the participant. For example, language, literacy and numeracy demands of assessment should not be greater than those required on the job.

	<ul style="list-style-type: none"> • Customisation of assessment and delivery environment to sensitively accommodate cultural diversity. • Aboriginal people and other people from a non English speaking background may have second language issues. • Where applicable, physical resources should include equipment modified for people with disabilities. Access must be provided to appropriate learning and/or assessment support when required.
Method of assessment	<p>This unit may be assessed in a holistic way with other units of competency. The assessment strategy for this unit must verify required knowledge and skill and practical application using more than one of the following assessment methods:</p> <ul style="list-style-type: none"> • written and/or oral assessment of the candidate's required knowledge • observed, documented and/or first hand testimonial evidence of the candidate's: <ul style="list-style-type: none"> • implementation of appropriate requirement, procedures and techniques for the safe, effective and efficient achievement of required outcomes • consistent achievement of required outcomes • first hand testimonial evidence of the candidate's: <ul style="list-style-type: none"> • working with others to undertake the management of non-routine, complex technical situations • provision of clear and timely instruction and supervision by the individual of those involved in managing of non-routine, complex technical situations
Guidance information for assessment	Consult the SkillsDMC User Guide for further information on assessment including access and equity issues.

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.

Compliance documentation may include:	<ul style="list-style-type: none"> • legislative, organisation and site requirements and procedures • manufacturer's guidelines and specifications • Australian standards • Employment and workplace relations legislation • Equal Employment Opportunity and Disability Discrimination legislation
Problems may include:	<ul style="list-style-type: none"> • formation problems • loss of sample • lost circulation • pressure formations • differential pressure sticking • hole deviation • loss of sample integrity • encountering unexpected contaminants, or contaminants in higher than expected concentrations • old mine workings • fishing • loss of penetration • sudden loss of pump pressure
Information sources may include:	<ul style="list-style-type: none"> • technical manuals • team members • previous experience • drilling logs • mine site plans • geological data
Depth and breadth of knowledge and experience may relate to:	<ul style="list-style-type: none"> • equipment • products • ground conditions • rigs • drilling methods and techniques
Non-routine and complex	<ul style="list-style-type: none"> • deep holes

technical operations may include:	<ul style="list-style-type: none">• formation kicks• bore hole stability• directional control• geometry bore holes and/or multilateral completion/technology
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Unit Sector(s)

Business Effectiveness

Competency field

Refer to Unit Sector(s).

Co-requisite units

Not applicable.