



**Australian Government**

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

# **RIISAM311A Maintain winder equipment**

**Release: 1**

## RIISAM311A Maintain winder equipment

### Modification History

Not applicable.

### Unit Descriptor

This unit covers maintaining winder equipment in the coal and metalliferous mining industries. It includes: preparing for winder equipment inspection and maintenance; conducting winder equipment maintenance and post-maintenance activities.

### Application of the Unit

This unit applies in all contexts to the maintenance of winder equipment, not including shafts. It is appropriate for those working in a operational or maintenance roles, at worksites within:

- Coal mining
- 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. |
|-------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

## Elements and Performance Criteria

| ELEMENT                                                    | PERFORMANCE CRITERIA                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
|------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1. Prepare for winder equipment inspection and maintenance | 1.1. Access, interpret and apply <b>compliance documentation</b> relevant to the <b>inspection and maintenance</b> of <b>winder</b> equipment<br>1.2. Receive, interpret and clarify maintenance schedules and details<br>1.3. Select personal protective equipment appropriate for work activities<br>1.4. Conduct work according to <b>site procedures</b> and relevant legislation<br>1.5. Perform equipment and work area pre-start checks to ensure equipment is ready for maintenance<br>1.6. Check records for outstanding maintenance/ inspections and recorded defects to assess scope of work<br>1.7. Identify replacement parts and service tools from the servicing schedule and obtain them from the appropriate stores area.<br>1.8. Identify, address and report <b>potential hazards and risks</b><br>1.9. Coordinate and liaise with appropriate persons to arrange details of preparatory activities, timing and location of maintenance<br>1.10. Obtain clearance from winder driver, or establish that start-up procedures have been completed, and the area is clear for operations<br>1.11. Manage maintenance <b>environmental issues</b><br>1.12. Establish emergency contingency plans with winder driver should an underground emergency arise, and adheres to site emergency procedures<br>1.13. Ensure area is properly ventilated before entry into work area |
| 2. Conduct winder equipment maintenance                    | 2.1. Check and prepare appropriate tools, materials and services<br>2.2. Perform all isolation and tagging out<br>2.3. Ensure person in charge of winder has placed winder in inspection/maintenance                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |

|                                        |                                                                                                                                                                                                                                                                                                                                                                 |
|----------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                                        | <p>mode, including "inching"</p> <p>2.4. Carry out maintenance</p> <p>2.5. Complete maintenance and record any follow-up action in accordance with maintenance system requirements</p> <p>2.6. Ensure all safety guards are in place and tag removed before winder equipment is made operational</p>                                                            |
| 3. Conduct post-maintenance activities | <p>3.1. Complete all required documentation clearly, concisely and on time</p> <p>3.2. Ensure area is clear of foreign materials and tools, and meets an acceptable standard of <b><i>cleanliness</i></b></p> <p>3.3. Ensure winding operations are tested and monitored</p> <p>3.4. Advise appropriate personnel when maintenance activities are concluded</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 in this unit, particularly for the application in the various circumstances in which this unit may be applied. This includes the ability to carry out the following as required to maintain winder equipment:

- apply legislative, organisation and site requirements and procedures
- apply standard operating practices and procedures around shafts
- apply safe work practices
- apply procedures to monitor critical components
- apply communication and reporting requirements and procedures
- use hand and power tools

### Required knowledge

Specific knowledge is required to achieve the Performance Criteria of this unit, particularly its application in a variety of circumstances in which the unit may be used. This includes knowledge of the following, as required to maintain winder equipment:

- shaft winder operations
- the key areas of mine safety and health legislation pertaining to plant and winding
- winder types
- shaft infrastructure
- defects which have potential to occur in winder equipment/installations
- maintenance management requirements and procedures for winding systems
- trip and fault conditions and other abnormal conditions
- site emergency procedures
- reporting and recording requirements for winder drivers, electrical and mechanical maintenance personnel
- environmental procedures associated with maintenance of winders
- equipment processes that are applicable, including technical capability and limitations
- energy isolation methods
- operation of protective devices in shaft and winder operations
- mine ventilation system
- site procedures
- in-shaft communications equipment

## 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.

|                                                                                                     |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
|-----------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Overview of assessment</b>                                                                       |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| <b>Critical aspects for assessment and evidence required to demonstrate competency in this unit</b> | <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"> <li>• knowledge of the requirements, procedures and instructions for maintaining winder equipment</li> <li>• implementation of requirements, procedures and techniques for the safe, effective and efficient completion of the maintenance of winder equipment</li> <li>• working with others to undertake and complete the maintenance of winder equipment that meets all of the required outcomes</li> <li>• consistent timely completion of the maintenance of winder equipment that safely, effectively and efficiently meets the required outcomes</li> </ul> |
| <b>Context of and specific resources for assessment</b>                                             | <ul style="list-style-type: none"> <li>• 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.</li> <li>• 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.</li> <li>• Customisation of assessment and delivery environment to sensitively accommodate cultural diversity.</li> <li>• Aboriginal people and other people from a non English speaking background may have second</li> </ul>       |

|                                            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
|--------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                                            | <p>language issues.</p> <ul style="list-style-type: none"><li>• Assessment of this competency requires typical resources normally used in the work environment. Selection and use of resources for particular worksites may differ due to site circumstances.</li><li>• Where applicable, physical resources should include equipment modified for people with disabilities.</li><li>• Access must be provided to appropriate learning and/or assessment support when required.</li></ul>                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| <b>Method of assessment</b>                | <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"><li>• written and/or oral assessment of the candidate's required knowledge</li><li>• observed, documented and/or first hand testimonial evidence of the candidate's:<ul style="list-style-type: none"><li>• implementation of appropriate requirement, procedures and techniques for the safe, effective and efficient achievement of required outcomes</li><li>• consistently achieving the required outcomes</li></ul></li><li>• first hand testimonial evidence of the candidate's:<ul style="list-style-type: none"><li>• working with others to undertake and complete the maintenance of winder equipment</li></ul></li></ul> |
| <b>Guidance information for assessment</b> | <p>Consult the SkillsDMC User Guide for further information on assessment including access and equity issues.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |

## 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.

|                                                          |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
|----------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Relevant compliance documentation</b><br>may include: | <ul style="list-style-type: none"> <li>• legislative, organisation and site requirements and procedures</li> <li>• manufacturer's guidelines and specifications</li> <li>• Australian standards</li> <li>• code of practice</li> <li>• Employment and workplace relations legislation</li> <li>• Equal Employment Opportunity and Disability Discrimination legislation</li> </ul>                                                                                                                                                             |
| Winder <b>inspection/maintenance</b><br>may include:     | <ul style="list-style-type: none"> <li>• winder performance tests</li> <li>• monitoring of protective devices</li> <li>• rope tensioning or replacement or examination</li> <li>• replacement or examination of rope attachments</li> <li>• conveyance change-over</li> <li>• lubrication</li> <li>• winder controller maintenance</li> <li>• sheave wheels</li> <li>• winder drums</li> <li>• head frames</li> <li>• hydraulics</li> <li>• electrical and electronic control systems</li> <li>• computer and communication systems</li> </ul> |
| <b>Winding</b> operations include winder operations in:  | <ul style="list-style-type: none"> <li>• drifts</li> <li>• tunnels</li> <li>• slopes</li> <li>• inclines</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                            |
| <b>Site procedures</b> may include:                      | <ul style="list-style-type: none"> <li>• clean up</li> <li>• equipment shutdown and isolation procedures</li> <li>• evacuation procedures</li> <li>• First Aid</li> <li>• notifying relevant authorities</li> <li>• permit-to-work systems</li> </ul>                                                                                                                                                                                                                                                                                          |

|                                                 |                                                                                                                                                                                                                                                                                                                               |
|-------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                                                 | <ul style="list-style-type: none"> <li>• safety equipment</li> <li>• use of personal protective equipment</li> <li>• communication procedures (e.g. with winder operator)</li> <li>• portable electric apparatus procedures</li> <li>• fall arrestor and harness procedures</li> <li>• confined spaces</li> </ul>             |
| Equipment <b>cleaning</b> methods may include:  | <ul style="list-style-type: none"> <li>• degreasing</li> <li>• forced air</li> <li>• steam cleaning</li> <li>• vacuum</li> <li>• water</li> <li>• rags and cotton waste</li> <li>• solvents</li> </ul>                                                                                                                        |
| <b>Potential hazards and risks</b> may include: | <ul style="list-style-type: none"> <li>• communication failure</li> <li>• falling objects</li> <li>• movement of equipment</li> <li>• plant failure</li> <li>• power failure</li> <li>• spillage</li> <li>• unauthorised personnel</li> <li>• visibility</li> <li>• explosion</li> <li>• asphyxiation and drowning</li> </ul> |
| <b>Environmental issues</b> may include:        | <ul style="list-style-type: none"> <li>• dust</li> <li>• water</li> <li>• heat</li> <li>• oxygen deficiency</li> <li>• vibration</li> <li>• fumes</li> <li>• noise</li> <li>• oil spills</li> <li>• flammable and noxious gases</li> <li>• flammable dust</li> </ul>                                                          |

## Unit Sector(s)

Service and Maintenance

## **Competency field**

Refer to Unit Sector(s).

## **Co-requisite units**

Not applicable.