



Australian Government

PMAOPS261A Operate bulk solids loading equipment

Release 1

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Modification History

Release 1 – New unit

Unit Descriptor

This unit of competency covers the skills and knowledge needed to operate a range of equipment used to convey and load bulk solids.

Application of the Unit

This unit applies to a person who has the responsibility for the operation of filling and loading equipment for bulk solids in sealed containments for shipment from the plant by road or rail. It can include a range of supplementary equipment. It is not intended to apply to line conveyors as part of a ship loading system.

This unit applies to an individual working alone or as part of a team or group and working in liaison with other shift team members and the control room operator, as appropriate.

This unit applies in metalliferous processing plants and other plants which load bulk solids.

This unit has been written with minerals processing plants as the specific focus. However, it could also be applied to any plant in which raw product is produced for transporting for further processing, such as in the manufacture of plastics or other particulates with appropriate contextualisation.

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

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| 1 | Prepare for work | 1.1 | Check documentation for load-out details |
| | | 1.2 | Identify work requirements |
| | | 1.3 | Identify and report any hazards in accordance with procedures |
| | | 1.4 | Coordinate with appropriate personnel |
| | | 1.5 | Check operational status of equipment |
| | | 1.6 | Complete any required pre-start checks |
| 2 | Manage bulk material storage and operate load-out equipment | 2.1 | Visually inspect storage facility and load-out equipment |
| | | 2.2 | Determine levels of solids in storage using appropriate indicators |
| | | 2.3 | Ensure load-out equipment is ready for operation |
| | | 2.4 | Ensure storage discharge areas are free from obstructions |
| | | 2.5 | Operate load-out equipment |
| | | 2.6 | Monitor flow of materials as appropriate |
| | | 2.7 | Ensure containment is properly sealed according to |

- procedures after load-out
- 2.8 Move containment to transshipment area
- 3 Recognise problems and take appropriate action
- 3.1 Monitor plant frequently and critically throughout shift using measured/indicated data and senses (e.g. sight and hearing), as appropriate
- 3.2 Recognise developing situations which may require action
- 3.3 Identify and rectify/report faults in accordance with established enterprise procedures
- 3.4 Identify non-routine problems and report according to procedures
- 3.5 Complete appropriate records and log books of equipment operations to meet enterprise requirements
- 4 Carry out maintenance procedures
- 4.1 Recognise a maintenance need according to procedure
- 4.2 Isolate loading equipment and prepare for maintenance
- 4.3 Complete minor maintenance according to procedures
- 4.4 Receive plant back from maintenance and check for safe operation
- 4.5 Prepare plant for the introduction of materials and for operation
- 5 Control hazards
- 5.1 Identify hazards in the load-out work area
- 5.2 Assess the risks arising from those hazards
- 5.3 Implement measures to control those risks in line with procedures
- 5.4 Shut down load-out equipment in an emergency, as required

Required Skills and Knowledge

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

Required skills

Required skills include:

- recognising conditions which will lead to out of specification operation
- implementing enterprise procedures within time constraints and in a manner relevant to the correct use of the equipment
- operating skills sufficient to correctly operate the equipment
- conveying information relevant to the operation clearly and effectively
- reading and numeracy to interpret workplace documents and technical information
- applying mathematics to the level necessary to monitor instrumentation

Required knowledge

Required knowledge, to the breadth and depth required for the operation of bulk particulates loading equipment, includes:

- principles of operation of load-out equipment
- process parameters and limits
- duty of care obligations
- typical issues causing problems and the resolution of those problems
- routine problems, faults and their symptoms and the corrective action to be taken
- relevant alarms and actions
- plant process idiosyncrasies
- relevant environmental and heritage requirements
- distinguish between causes of problems, such as:
 - material
 - instrument
 - equipment (electrical/mechanical)
 - maintenance
- relevant work health and safety (WHS) and environmental requirements, along with an ability to implement them within appropriate time constraints and in a manner which is relevant to the operation of the materials load-out 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.

Critical aspects for assessment and evidence required to demonstrate competency in this unit

Critical aspects for assessment and evidence are:

- early warning signs of equipment/processes needing attention or with potential problems are recognised
- the range of possible causes can be identified and analysed and the most likely cause determined
- appropriate action is taken to ensure a timely return to full performance.

Context of and specific resources for assessment

Assessment of this competency will occur over a range of situations which will include typical disruptions to normal, smooth operation. This will require access to an operating plant over an extended period of time, or a suitable method of gathering evidence of operating ability. Where safety, lack of opportunity or significant cost is an issue an industry-based simulation may be employed to assist the process.

Guidance information for assessment

Assessment processes and techniques must be appropriate to the language, competency and safety requirements of the site and consistent with workplace systems or procedures.

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.

Procedures

Procedures may be written, verbal, computer-based or in some other form. They may include, but are not limited to:

- all work instructions
- standard operating procedures
- formulas/recipes
- batch sheets
- temporary instructions
- any similar instructions provided for the smooth running of the plant
- good operating practice as may be defined by industry codes of practice

Procedures would be expected to comply with any relevant government regulations.

Logs and reports

Logs and reports may include:

- paper or electronic-based logs and reports
- verbal/radio reports
- reporting items found which require action

Appropriate action

Appropriate action includes but is not limited to:

- determining problems needing action
- determining possible fault causes
- rectifying predictable problems using appropriate solution from procedures
- following through items initiated until final resolution has occurred
- reporting problems outside area of responsibility/scope to designated person

Equipment

Load-out equipment may include, but is not limited to:

- hoppers, bins or silos
- conveyors
- chutes

- dust extraction equipment and bag houses
- automated bagging or filling equipment
- vibratory settling equipment
- roller conveyors
- motorised lifting equipment
- appropriate personal protective equipment (PPE)
- weighing equipment
- moisture testing equipment

Containments

Solids containments may include, but are not limited to:

- bulk bags
- drums
- road tankers
- hopper cars
- containers
- sealed bins

Health, safety and environment (HSE)

All operations to which this unit applies are subject to stringent HSE requirements, which may be imposed through state or federal legislation, and these must not be compromised at any time. Where there is an apparent conflict between Performance Criteria and HSE requirements, the HSE requirements take precedence.

Typical problems

Typical problems may include:

- rat holing and bridging in silos/bins/hoppers
- routing issues
- equipment problems

Work requirements

Work requirements may come from briefings, handovers and work orders and may include:

- compliance documentation
- product specifications
- nature and scope of tasks
- achievement targets
- operational conditions
- site layout and out of bounds areas
- worksite inspection requirements
- lighting conditions
- plant or equipment defects
- hazards and potential hazards
- coordination requirements or issues

Appropriate personnel

Appropriate personnel may include:

- other process operators
- contractors
- laboratory personnel
- mobile plant operators
- maintenance personnel

Unit Sector(s)

Competency field Operational/technical

Unit sector

Custom Content Section

Not applicable.