



Australian Government

Department of Education, Employment and Workplace Relations

RIIPBP301A Process lime products

Release: 1

RIIPBP301A Process lime products

Modification History

Not applicable.

Unit Descriptor

This unit covers the processing of lime products in the metalliferous mining industry. It includes planning and preparing for lime production operations, operating crushed limestone feed systems, conducting lime kiln operations, monitoring and controlling the discharge of burnt lime to slaking plant storage, and monitoring and controlling the milk of lime plants. 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 an operational role at worksites within:

- 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. Plan and prepare for lime production operation	1.1. Access, interpret and apply compliance documentation relevant to the work activity 1.2. Plan and prepare work 1.3. Receive, interpret and clarify shift changeover details 1.4. Communicate with other personnel using approved communication methods 1.5. Select personal protective equipment appropriate for work activities 1.6. Carry out routine safety checks 1.7. Carry out equipment pre-start checks 1.8. Identify, address and report potential risks and hazards 1.9. Identify, address and report environmental issues 1.10. Adhere to emergency procedures
2. Operate crushed limestone feed systems	2.1. Start-up feedsystems in sequence according to site operating procedures using Distributed Control Systems (DCS) 2.2. Monitor feeder plant and equipment and identify, address and/or report faults and malfunctions using DCS 2.3. Interpret and respond to alarms and indicators using DCS 2.4. Monitor and adjust feed rates to meet processing requirements using DCS 2.5. Shutdown feeder plant and equipment in emergency situations according to site procedures using DCS 2.6. Observe safety procedures when working around feeder plant and equipment 2.7. Perform feeder shutdown procedures and/or isolate equipment in sequence according to site procedures using DCS
3. Conduct lime kiln operations	3.1. Operate, monitor and adjust kiln processing systems and media for safe, effective kiln operation and product quality using DCS 3.2. Monitor performance of burners using DCS and adjust and/or replace burner

	components 3.3. Operate and adjust discharge tables to meet production requirements 3.4. Monitor and maintain discharged limestone temperature to within specified parameters using DCS 3.5. Observe safety procedures for entering hot kilns
4. Monitor and control discharge of burnt lime to slaking plant storage	4.1. Monitor and control burnt lime conveyor/flow system for clear flow and delivery of burnt lime using DCS 4.2. Monitor and control the temperature of burnt lime to ensure it does not exceed maximum allowable temperature using DCS 4.3. Interpret and respond to alarms and indicators 4.4. Monitor and control crushing plant 4.5. Monitor and control input and discharge of silos 4.6. Monitor and control dust extraction plant and equipment to maintain a safe atmosphere and minimise product loss 4.7. Observe safety procedures when working with burnt limestone
5. Monitor and control milk of lime plant	5.1. Monitor and control the process stream through the milk of lime plant 5.2. Interpret and respond to alarms and indicators 5.3. Control slaking plant operation 5.4. Monitor and adjust milk of lime density to meet specification 5.5. Monitor and control pumping of milk of lime 5.6. Observe safety procedures when working with radiation devices

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 the following, as required to process lime products:

- apply legislative, organisation and site requirements and procedures for processing lime products
- handle dangerous materials
- read and interpret instrumentation
- interpret instructions and reports
- diagnose faults
- lift (manual, cranes and loads)
- maintain records
- apply safe work practices
- use hand and power tools
- work in confined spaces

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 process lime products:

- properties and composition of limestone
- breakdown procedures
- storage methods and capacities
- safety considerations with hot limestone
- dust extraction systems and plant
- feed systems, plant and equipment
- kiln/calcining processes, plant and equipment
- slaking processes, plant and equipment
- equipment limitations and operating parameters
- equipment safety requirements
- emergency procedures
- environmental procedures
- hazardous goods procedures and consequences of spills and hazardous goods
- identifying repair requirements
- isolation procedures
- technical data (basic)
- OHS procedures
- operational procedures and checks

- | |
|--|
| <ul style="list-style-type: none">• quality monitoring and control |
|--|

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	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: • knowledge of the requirements, procedures and instructions for processing lime products • implementation of requirements, procedures and techniques for the safe, effective and efficient completion of lime product processing • working with others to undertake and complete the processing of lime products that meets all of the required outcomes • consistent timely completion of lime product processing that safely, effectively and efficiently meets the required outcomes
Context of and specific resources for assessment	• 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. • 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	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: • written and/or oral assessment of the candidate's required knowledge • observed, documented and/or first hand testimonial evidence of the candidate's: • 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: • working with others to undertake and complete the processing of lime products
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.

Relevant compliance documentation may include:	• legislative, organisational and site requirements and procedures • manufacturer's guidelines and specifications • Australian standards • Employment and workplace relations legislation • Equal Employment Opportunity and Disability Discrimination legislation
Shift changeover details may include:	• shutdowns • clearances/permits • operating instructions for the shift • safety issues • environmental issues
Routine safety checks may include:	• trip hazards • loss control inspections • lighting • signage • emergency safety showers/lights • asbestos
Potential risks and hazards may include:	• heat • noise • burnt lime • conveyors • steam • stock pile • fuel • mobile equipment
Pre-start checks may include:	• detection of conditions that are unusual • personnel availability • job requirements for the shift • walk through plant • interlocks • alarms

Equipment may include:	• vibratory feeders • conveyors • grizzlies • holding bin • skip hoist • chutes and flaps • kiln • crusher • bucket elevator • silos • bag house (de-dust and dust collection) • rake classifier • tanks, pumps, valves and scale traps
Environmental issues may include:	• drainage • dust (dump) • emissions • flora and fauna • hazardous chemicals • noise • recycling • run-off • spills • waste management and disposal • water quality
Feed systems may include:	• conveyors • tramp metal magnet • undersize grizzly • rill tower and stockpile • distributed Control Systems (DCS)
Feeder plant and equipment may include:	• storage/holding bin • weigh hopper • skip hoist • service hopper and control flaps • DCS
Alarms and indicators may include:	• flow • current (e.g. agitators) • density • levels • restrictions • air flows • pressure

	• speed (e.g. pumps) • unusual noises • vibrations • power • temperature • radiation levels
Safety procedures may include:	• feeder plant: • electrical checks/inspections on conveyors and all associated equipment • mechanical checks/inspections on conveyors and all associated equipment • checks/inspections control systems • manual handling • reporting incident/accident/near misses • commission/de-commission the system • emergency response • Hot kilns: • electrical checks/inspections on kilns and all associated equipment • mechanical checks/inspections on kilns and all associated equipment • control system checks/inspections • commission/de-commission the system • emergency response • reporting incidents/accidents near misses • Burnt limestone: • personal protective equipment. • housekeeping • routine checks/inspections
Kiln processing systems and media may include:	• combustion air • cooling air • hydraulic systems • cooling oil • fuel • DCS and other control systems as may be used in refineries
Product quality may be compromised by:	• over burnt limestone • under burnt limestone • milk of lime outside of parameters • mechanical equipment breakdown • electrical equipment breakdown • control system fault

Adjustment or replacement of burner components may include:	• burner tips • burner lances • steam purge • fuel supply • filters • gauges (e.g. flow, pressure)
Dust extraction plant may include:	• de-dust system • bag house • filter bags • pulse air • electronic and mechanical controls

Unit Sector(s)

Processing

Competency field

Refer to Unit Sector(s).

Co-requisite units

Not applicable.