Australian Government

Department of Education, Employment and Workplace Relations

RIIPBE202A Conduct digestion process

Release: 1

RIIPBE202A Conduct digestion process

Modification History

Not applicable.

Unit Descriptor

This unit covers the conduct of digestion processes in the metalliferous mining industry. It includes planning and preparing for digestion operations, starting up equipment in sequence, operating and monitoring equipment, conducting housekeeping operations, and shutting down in sequence and/or isolating equipment. 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 digestion operations	1.1. Access, interpret and apply ***compliance documentation*** relevant to the work activity 1.2. Receive, interpret and clarify shift changeover details 1.3. Communicate with other personnel using approved communication methods 1.4. Select personal protective equipment appropriate for work activities 1.5. Select appropriate type of ***auxiliary equipment*** for work activities 1.6. Perform equipment ***pre-start checks*** to ensure equipment is ready for operation 1.7. Identify, address and report potential risks and hazards 1.8. Identify, address and report ***environmental issues*** 1.9. Adhere to emergency procedures to ensure safety of personnel and plant 1.10. Use approved dust suppression and extraction methods 1.11. Ensure area is well ventilated before entry into work area
2. Start-up equipment in sequence	2.1. Carry out ***start-up procedures*** and completes start-up checks according to plant configurations and system requirements 2.2. Confirm ***plant*** is operational
3. Operate and monitor equipment	3.1. ***Read*** and interpret data from equipment ***indicators*** to determine efficiency 3.2. Continuously inspect and ***monitor*** operations/plant and catchment areas to digestion process defects and potential problems 3.3. Adjust equipment to approved operating parameters to optimise and maintain efficient digestion and to meet product quality targets 3.4. Add reagents to approved operating parameters 3.5. Carry out minor maintenance to maintain

	condition of equipment 3.6. Complete all required documentation clearly, concisely and on time 3.7. Pass on end of shift information to oncoming shift
4. Conduct housekeeping activities	4.1. ***Clean plant*** to maintain condition of all equipment to ensure safe and efficient operations 4.2. Manage and report hazards to maintain a safe working environment
5. Shutdown in sequence and/or isolate equipment	5.1. Shutdown or isolate equipment based on process and safety requirements 5.2. Perform ***post shutdown*** or isolation checks

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 conduct the digestion process:

- apply legislative, organisation and site requirements and procedures for conducting the digestion process
- diagnose faults
- identify and manage hazards
- handle hazardous goods
- interpret reports
- lift (manual, cranes and loads)
- maintain records
- report defects
- apply safe work practices
- troubleshoot
- use hand and power tools

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 conduct the digestion process:

- breakdown procedures
- contaminant identification
- digestion process (basic)
- emergency procedures
- environmental procedures
- equipment limitations and operating parameters
- equipment safety requirements
- hazardous goods procedures and consequences of spills and hazardous goods
- identifying repair requirements
- isolation procedures
- metallurgical and technical data (basic)
- OHS procedures
- operational procedures and checks
- pumping system and flow charts (pipeline and sprinkler systems)
- reagent types

- sampling
  - site procedures
  - site safety requirements
  - types of ores (basic)
  - wet and dry working procedures

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 conducting the digestion process • implementation of requirements, procedures and techniques for the safe, effective and efficient completion of the digestion process • working with others to undertake and complete the digestion process in a way that meets all of the required outcomes • consistent timely completion of the digestion process 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 digestion process

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
Legislation may include Acts and regulations dealing with:	• mining safety and health • mine inspection • OHS • explosives
Auxiliary equipment may be anything that is portable and mobile that is not part of the fixed infrastructure, and may include:	• compressors • distribution control systems (DCS) • feeders • gantry cranes and attachments and other mobile equipment • hand and power tools • hoses
Pre-start checks may include:	• availability of equipment (e.g. conveyor) • detection of conditions that are unusual • personnel availability • job requirements • levels • walk through plant
Environmental issues may include:	• drainage • dust (dump) • emissions • flora and fauna • hazardous chemicals • noise • recycling • run-off • spills

	• waste management and disposal • water quality
Start-up procedures may include:	• cameras and monitors • interlocks • distribution control system • flash vessels • launders • heat exchangers • hydraulic system • pumping system • screen inspections • scuttling pumps • pipes and flanges • drive belts • valves • vessels • visual and audio warning devices and lights • suppression systems
Plant may include:	• heat exchanger • burners • lines • gas train • vessels • conveyors • valves
Indicator readings may measure:	• flow • current (e.g. agitators) • density • levels • restrictions • pressure • speed (e.g. pumps) • unusual noises • vibrations • power • temperature
Monitoring the drying process may include:	• blockages and spillages • feed rates • mineral content • moisture levels • on stream analysis (OSA)

	• overloads • pressures • power draw • temperature • wear and tear • emission (e.g. cyanide) • levels • laboratory results
Equipment and plant cleaning methods may include:	• hosing with water • high pressure cleaning
Post-shutdown checks are like pre-start checks.	
The methods used to optimise the plant may include:	• quantity of reagents • flow • temperature • pressure • A/C ratio • condensate quality
Materials may include:	• slurry • steam
Contaminants are anything other than the ore. Common contaminants may include:	• oil • fuel • gases • organic materials • moisture

Unit Sector(s)

Beneficiation

Competency field

Refer to Unit Sector(s).

Co-requisite units

Not applicable.