



Australian Government

MEM48017 Monitor blast furnace operations

Release: 1

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Modification History

Release 1. Supersedes and is equivalent to MSATCM506A Monitor blast furnace operations.

Application

This unit of competency defines the knowledge and skills required to monitor and control the operation of blast iron furnace.

It applies where a technician will be required to utilise a Supervisory Control and Data Acquisition (SCADA) system to monitor the melting of iron ores and associated materials within a blast furnace, ensuring that quantities, temperatures and all procedures are used in accordance with parameters provided and standard operating procedures (SOPs).

No licensing, legislative or certification requirements apply to this unit at the time of publication.

Pre-requisite Unit

MEM48004 Interpret basic binary phase diagrams

MEM48011 Apply basic chemical principles to metallurgy

MEM48012 Calculate and predict chemical outcomes in metallurgical situations

Competency Field

Metallurgy

Elements and Performance Criteria

Elements	Performance Criteria
<i>Elements describe the essential outcomes.</i>	<i>Performance criteria describe the performance needed to demonstrate achievement of the element.</i>
1. Determine job requirements	1.1 Follow standard operating procedures (SOPs) 1.2 Comply with work health and safety (WHS) requirements at all times 1.3 Use appropriate personal protective equipment (PPE) in accordance with SOPs 1.4 Identify job requirements from work information
2. Access and use SCADA system	2.1 Find all relevant screens and information within SCADA system 2.2 Interpret and acknowledge messages

Elements	Performance Criteria
<i>Elements describe the essential outcomes.</i>	<i>Performance criteria describe the performance needed to demonstrate achievement of the element.</i>
	2.3 Input and output information according to work requirements
3. Make required changes	3.1 Adjust production and/or process in response to SCADA information in accordance with procedures 3.2 Apply metallurgical principles to determine and prioritise required actions in accordance with SOPs 3.3 Record adjustments and variations to specifications and/or schedules and report to appropriate personnel 3.4 Refer all events outside of parameters or SOPs to appropriate personnel for remedial action immediately

Foundation Skills

This section describes those language, literacy, numeracy and employment skills that are essential to performance.

Foundation skills essential to performance are explicit in the performance criteria of this unit of competency.

Range of Conditions

This field allows for different work environments and conditions that may affect performance. Essential operating conditions that may be present (depending on the work situation, needs of the candidate, accessibility of the item, and local industry and regional contexts) are included.

Supervisory Control and Data Acquisition (SCADA) system includes one or more of the following:	- field instrumentation - field controller (RTU or PLC) - human-machine interface (HMI) - network connectivity - data storage on-site or cloud.
Techniques for increasing blast furnace productivity include:	- blast temperature - blast humidity - blast volume - hydrogen injection - oxygen enrichment - top pressure - burden control and raw materials

	• size control.
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Unit Mapping Information

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Links

Companion Volume implementation guides are found in VETNet -

<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=b7050d37-5fd0-4740-8f7d-3b7a49c10bb2>