



Australian Government

RIIPSM308D Monitor and maintain furnace gas efficiency

Release: 2

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Modification History

Release	Comment
1	This unit replaces RIIPSM308A Monitor and maintain furnace gas efficiency
2	Required frequency and volume of evidence amended in Performance evidence. Substantial amendments made in Assessment Conditions field, including: references to Industry Sectors, assessor and subject matter expert experience requirements, how assessment should be conducted and what it should confirm.

Application

This unit describes a participant's skills and knowledge required to monitor and maintain furnace gas efficiency in Metalliferous mining.

This unit is appropriate for those working in operational roles.

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.

Unit Sector

Metalliferous mining

Elements and Performance Criteria

1. Prepare and prepare for monitoring and maintaining furnace gas efficiency	1.1 Access, interpret and apply smelting documentation and ensure the work activity is compliant 1.2 Receive, interpret and clarify verbal and written shift changeover details 1.3 Establish and maintain communication with other personnel 1.4 Select appropriate personal protective equipment for the work activity 1.5 Select appropriate auxiliary equipment 1.6 Carry out equipment pre-start checks 1.7 Identify, address and report potential risks, hazards and environmental issues and implement control measures
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	1.8 Follow emergency procedures 1.9 Use approved dust suppression and extraction methods 1.10 Ensure adequate ventilation to work area before commencing the work activity
2. Maintain efficient operation of furnace gas plant and systems	2.1 Carry out plant and equipment start-up checks and procedures 2.2 Carry out monitoring and control on Distributed Control Systems (DCS) 2.3 Operate and maintain air operated breathing equipment for furnace off-line entry
3. Control furnace gas emissions	3.1 Carry out plant and equipment start-up checks and procedures 3.2 Monitor and operate accretion build-up removal equipment 3.3 Monitor and maintain furnace feed chutes and ensure they are free of blockages, 3.4 Collect samples of molten metal to confirm molten metal quantity and condition of molten metal bath
4. Maintain efficient operation of furnace air injection equipment	4.1 Carry out plant and equipment start-up checks and procedures 4.2 Monitor furnace conditions and operations to identify the correct, efficient operation of the furnace air injection equipment, and report to appropriate personnel 4.3 Identify variances to furnace and air injection equipment operation, record and repair where possible 4.4 Clean furnace air injection equipment/device without causing damage 4.5 Check and record furnace air injection equipment/device position, and recalibrate where outside operating parameters
5. Ensure supply of additives	5.1 Monitor and maintain condition of furnace feed materials 5.2 Monitor furnace additives supply and report to appropriate personnel
6. Maintain plant and equipment efficiency	6.1 Clean plant to maintain condition of all equipment 6.2 Interpret and respond to plant alarms, take corrective actions and notify appropriate personnel 6.3 Check and adjust plant condition 6.4 Install and control stand-by furnace burner equipment 6.5 Inspect air, gas, diesel and combustion supply equipment, report and rectify faults, damaged or inoperable equipment to appropriate personnel

	6.6	Carry out minor plant maintenance and lubrication
	6.7	Provide support for maintenance personnel
7. Shutdown plant and equipment	7.1	Shutdown or isolate plant/equipment
	7.2	Perform post shutdown or isolation checks
	7.3	Pass on shift changeover details to oncoming shift

Foundation Skills

Foundation skills essential to performance are explicit in the performance criteria of this unit. Further information is available in the Resources and Infrastructure Industry Training Package Companion Volume.

Unit Mapping Information

RIIPSM308A Monitor and maintain furnace gas efficiency

Links

Companion Volume implementation guides are found in VETNet -

<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=88a61002-9a21-4386-aaf8-69c76e675272>

Assessment Requirements for RIIPSM308D Monitor and maintain furnace gas efficiency

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Performance Evidence

Evidence is required to be collected that demonstrates a candidate's competency in this unit. Evidence must be relevant to the roles within this sector's work operations and satisfy all of the requirements of the performance criteria of this unit and include evidence that the candidate:

- locates and applies relevant legislation, documentation, policies and procedures
- works effectively with others to undertake and complete the monitoring and maintenance of furnace gas efficiency that meets all of the required outcomes including:
 - complying with written and verbal reporting requirements and procedures
 - communicating clearly and concisely with others to receive and clarify work instructions and coordinate work activities
- demonstrates completion of the monitoring and maintenance of furnace gas efficiency that safely, effectively and efficiently meets all of the required outcomes on more than one (1) occasion including:
 - completing plant and equipment pre-start and start-up activities
 - operating, monitoring and maintaining equipment
 - inspecting equipment
 - monitoring and maintenance of feed chutes
 - performing post shut down and isolation checks

Knowledge Evidence

The candidate must demonstrate knowledge in monitoring and maintaining furnace gas efficiency through:

- applying combustion principles

- identifying importance of flame patterns/flame impingement
- applying methods of resolving combustion/gas problems
- applying principles of furnace operation/ furnace components

Assessment Conditions

- An assessor of this unit must satisfy the requirements of the NVR/AQTF or their successors; and Industry regulations for certification and licensing; and,
- this unit must be assessed in the context of this sector's work environment; and,
- this unit must be assessed in compliance with relevant legislation/regulation and using policies, procedures, processes and operational manuals directly related to the industry sector for which it is being assessed; and,
- assessment may be conducted in conjunction with the assessment of other Units of Competency; and,
- assessment must confirm consistent performance can be applied in a range of relevant workplace circumstances; and,
- assessors must demonstrate the performance evidence, and knowledge evidence as outlined in this Unit of Competency, and through the minimum years of current* work experience specified below in an Industry sector relevant to the outcomes of the unit; or,
- where the assessor does not meet experience requirements a co-assessment or partnership arrangement must exist between the qualified assessor and an Industry subject matter expert. The Industry subject matter expert should hold the unit being assessed (or an equivalent unit) and/or demonstrate equivalence of skills and knowledge at the unit level. An Industry technical expert must also demonstrate skills and knowledge from the minimum years of current work experience specified below in the Industry sector, including time spent in roles related to the unit being assessed; and,
- assessor and Industry subject matter expert requirements differ depending on the Australian Qualifications Framework Level (AQF) of the qualification being assessed and/or Industry Sector as follows:

Industry sector	AQF** Level	Required assessor or Industry subject matter expert experience
Drilling, Metalliferous Mining, Coal Mining, Extractive (Quarrying) and Civil Construction	1	1 Year
	2	2 Years
Drilling, Coal Mining and Extractive (Quarrying)	3-6	3 Years
Metalliferous Mining and Civil Construction	3-6	5 Years
Other sectors	Where this Unit is being assessed outside of the Resources and Infrastructure Sectors assessor and/or Industry subject matter expert	

	experience should be in-line with industry standards for the sector in which it is being assessed and where no Industry standard is specified should comply with any relevant regulation.
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*Assessors can demonstrate current work experience through employment within Industry in a role relevant to the outcomes of the Unit; or, for external assessors this can be demonstrated through exposure to Industry by conducting frequent site assessments across various locations.

**Where a unit is being delivered outside of a Qualification the first numeric character in the Unit code should be considered to indicate the AQF level

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