



Australian Government

RIIPRE301D Conduct electrowinning/electro-refining operations

Release: 2

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Modification History

Release	Comment
1	This unit replaces RIIPRE301A Conduct electrowinning/electrorefining operations
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 apply conduct electrowinning/electro-refining operations 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. Plan and prepare for electrowinning/electro-refining	1.1 Access, interpret and apply c documentation and procedures for conducting electrowinning electro-refining operations and ensure the work activity is compliant 1.2 Receive, interpret and clarify shift changeover details 1.3 Communicate job requirements with other personnel 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 1.7 Identify, address and report potential risks and hazards
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	1.8 Identify, address and report environmental issues 1.9 Adhere to emergency procedures 1.10 Use dust suppression and extraction methods 1.11 Ensure area is well ventilated
2. Monitor electrowinning/electro-refining	2.1 Monitor, gather and interpret data from equipment indicators 2.2 Monitor and adjust solution volume, feed quality and rate of flow in cells 2.3 Monitor cooling system according to site procedures 2.4 Monitor and maintain temperature, voltage and amps. 2.5 Continuously monitor operations 2.6 Minimise and monitor emissions 2.7 Complete all required documentation 2.8 Pass on end of shift information to oncoming shift 2.9 Conduct cell inspections 2.10 Observe and follow electrical safety techniques
3. Pull and strip plates	3.1 Ensure that electrowinning/electro-refining systems are safe for plate removal 3.2 Pull and strip plates using appropriate equipment 3.3 Inspect electrodes and identify rejects 3.4 Strip plates to site requirements 3.5 Stack and dispatch stripping products 3.6 Clean plates for reuse 3.7 Handle stripping products safely
4. Shutdown in sequence and/or isolate equipment	4.1 Shutdown or isolate equipment based on process and safety requirements 4.2 Perform post shutdown or isolation checks 4.3 Plan for shutdown/isolation and returning cells to service
5. Conduct housekeeping activities and return cell to service	5.1 Clean plant and maintain condition of equipment, ensure suitability for use and address/report issues 5.2 Manage and/or report hazards, and maintain a safe working environment 5.3 Maintain bus-bar cleanliness 5.4 Isolate cell and remove scale from anodes and cell according to site requirements

	5.5	Dispose of scale in accordance with site procedures
	5.6	Return cell to service in correct sequence
	5.7	Process records

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

RIIPRE301A Conduct electrowinning/electro-refining operations

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 RIIPRE301D Conduct electrowinning/electro-refining operations

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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 documentation, policies and procedures
- implements the requirements, procedures and techniques for the safe, effective and efficient completion of electrowinning/electro-refining operations including:
 - identifying and applying required environmental controls
 - identifying and managing hazards affecting the sinter of materials
 - identifying and applying dust suppression and extraction methods
 - handling hazardous substances correctly
 - identifying and applying isolation procedures
- demonstrates completion of electrowinning/electro-refining operations that safely, effectively and efficiently meets all of the required outcomes on more than one (1) occasion including:
 - performing start up in sequence on equipment to meet job requirements
 - operating plant to meet job requirements
 - reading equipment indicators
 - adjusting equipment to maintain optimum output
 - pulling and stripping plates
 - shutting down and/or isolating the equipment in sequence
 - performing routines checks on equipment

Knowledge Evidence

The candidate must demonstrate knowledge of the following when conducting electrowinning/electro-refining operations through:

- equipment operating parameters and safety requirements
- operational procedures and checks, including equipment inspection and rejection/replacement requirements
- metallurgical and technical data
- pumping system and flow charts (pipeline and sprinkler systems)

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.	

*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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