
**ELECTRICAL WORKERS REGISTRATION BOARD**

**THIRD DISCUSSION PAPER**

# CLASSES OF REGISTRATION, REQUIREMENTS/STANDARDS FOR REGISTRATION AND ASSOCIATED LIMITS OF WORK

August 2014

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**Executive Summary**

The Electrical Workers Registration Board (the Board) is carrying out a review of its classes of registration, requirements/standards for registration and associated limits of work.

The Board has made draft decisions on its review and those draft decisions are as follows;

(a) retain the generic registration class of electrician;

(b) introduce a new registration class of mining electrician;

(c) amend the requirements/standards for the generic registration class of electrician by granting exemptions from the electrician level theoretical examination;

(d) retain the generic registration class of electrical inspector;

(e) introduce a new registration class of mining electrical inspector;

(f) retain the registration class of electrical engineer, amend the limits of work for all applicants to the class not covered by the present Option 1 of the requirements/standards for registration, amend and combine the present Options 2 and 3 and retain the existing Agreement with the Institution of Professional Engineers New Zealand (IPENZ);

(g) amend the limits of work for the registration class of electrical installer;

(h) amend the limits of work for the registration class of electrical service technician;

(i) retain the registration classes of electrical appliance serviceperson (endorsed) and electrical appliance serviceperson;

(j) withdraw the existing registration class of line mechanic and replace it with three new registration classes being:

- transmission line mechanic
- rail line mechanic
- distribution line mechanic;

(k) define the limits of work for the line mechanic registration classes;

(l) extend the limits of work for the registration class of distribution line mechanic;

(m) introduce an endorsement to the registration class of distribution line mechanic which will permit the replacement of specific fittings and;

(n) introduce a registration class of substation maintainer.

## Introduction

On 13 March 2013 a second discussion paper was released for comment on classes of registration, requirements/standards for registration and associated limits of work (the first discussion paper was released on 29 August 2012).

The closing date for comments on the Board's second discussion paper was 12 April 2013 and twenty-three submissions were received.

As considerable work was being undertaken by the Industry Training Organisations on qualification reviews during 2013, the Board's review was held in abeyance awaiting the outcomes of the Industry Training Organisations' work. The Board and the Industry Training Organisations have worked in conjunction on aspects of the reviews and, as that work is now well advanced, it is considered that the Board's review can now proceed.

All submissions and comment received, along with the outcomes of the Industry Training Organisations' review work, have been considered by the Board and the Board has made draft decisions in relation to its proposals as set out in the previous discussion papers.

This paper sets out the Board's draft decisions.

## Opportunity to comment

The Board would like to give all interested parties the opportunity to comment on its draft decisions and detail on how to make comment is included in this paper.

## Draft decisions

The Board's draft decisions on its review of classes of registration, requirements/ standards for registration and associated limits of work are as follows;

<u>Electrician</u>

The Board has decided to:

(a) retain the generic registration class of electrician in its present form along with the requirements/standards for registration and associated limits of work;

(b) introduce a new registration class of mining electrician. This registration class will require registration in the generic registration class of electrician plus the satisfactory completion of specific mining competencies; and

(c) amend the requirements/standards for the generic registration class of electrician by granting exemptions from the electrician level theoretical examination for persons who hold a:

- Bachelor of Engineering (Electrical) qualification; or
- New Zealand Certificate in Engineering (Electrical) qualification; or

- National Diploma in Engineering (Electrotechnology) (Level 6); or

- New Zealand Diploma in Engineering (Level 6); or

- Engineering qualification determined equivalent to any of the abovementioned qualifications by either IPENZ or the New Zealand Qualifications Authority (NZQA).

The types of competencies envisaged for mining electrician and mining electrical inspector are included in the Appendix to this paper.

Electrical inspector

The Board has decided to:

(o) retain the generic registration class of electrical inspector in its present form along with the requirements/standards for registration and associated limits of work; and

(p) introduce a new registration class of mining electrical inspector. This registration class will require registration in the generic registration class of electrical inspector plus the satisfactory completion of specific mining competencies.

The types of competencies envisaged for mining electrician and mining electrical inspector are included in the Appendix to this paper.

Electrical engineer

The Board has decided to;

(a) retain the registration class of electrical engineer;

(b) amend the duration of practical experience and limits of work for all applicants not covered by Option 1 of the requirements/standards for registration to restrict the work to areas of work to which competency has been demonstrated;

(q) amend and combine the requirements of the present Options 2 and 3 of the requirements/standards for registration by adding the following words "or equivalent qualifications as determined by either IPENZ or NZQA"; and

(r) retain the existing Agreement with IPENZ for the acceptability of engineering qualifications.

Amended requirements/standards for the electrical engineer registration class are as follows:

| **Registration Class** | **Requirements/standards for registration** | **Limits of work** |
|---|---|---|
| **All classes of registration** | Every person seeking registration in any of the classes of registration is required, as a prerequisite, | The types of work each class of registration is permitted to perform are as listed below, unless the work being carried out |

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| | to have satisfactorily completed instruction in safe working practices, testing, basic first aid and cardio-pulmonary resuscitation as approved by the Board. | is specifically excluded from the definition of prescribed electrical work by clause 2 of the First Schedule to the Electricity (Safety) Regulations 2010. |
| **Electrical engineer** | Those seeking registration as an electrical engineer must fulfil all the requirements of one of the two options specified below:<br><br><u>Option 1</u><br><br>(a) immediately prior to the promulgation of the Electricity (Safety) Regulations 2010 (i.e. 1 April 2010) was a Qualified Engineer under the Electricity Act 1992.<br><br><u>Option 2</u><br><br>(a) holds a Bachelor of Engineering (Electrical) qualification or a National | The types of work an electrical engineer is permitted to carry out are as listed in the corresponding two options below;<br><br><u>Option 1</u><br><br>(a) the installation or maintenance of conductors used in works or installations; and<br><br>(b) the installation or maintenance of fittings connected, or intended to be connected, to conductors used in works or installations; and<br><br>(c) the connection or disconnection of fittings to or from a power supply, other than by means of a plug or pin inserted into a socket, or an appliance coupler inserted into an appliance inlet; and<br><br>(d) the maintenance of appliances; and<br><br>(e) the testing of work described in paragraphs (a) to (d) above; and<br><br>(f) the certification of work described in paragraphs (a) to (d) above; and<br><br>(g) the supervision of any work described in paragraphs (a) to (f) above.<br><br><u>Option 2</u><br><br>(a) the carrying out of prescribed electrical work in areas of work to which |

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| | Diploma in Engineering (Electrotechnology) (Level 6) or a National Diploma in Engineering) (Level 6), or a New Zealand Certificate in Engineering (Electrical) or an equivalent qualification as determined by either IPENZ or NZQA; and<br><br>(b) passed the electrician regulatory written examination; and<br><br>(c) passed the electrician practical examination or three stage practical assessments; and<br><br>(d) completed one year of practical experience which is satisfactory to the Board. | competency has been demonstrated; and<br><br>(b) the certification of work described in paragraph (a) above; and<br><br>(c) the supervision of any work described in paragraph (a) above. |

Electrical installer

The Board has decided to amend the limits of work for electrical installers who were previously registered as electricians with limits so that such people are entitled to carry out the same prescribed electrical work they could prior to April 2010.

Electrical service technician

The Board has decided to:

(a) amend the limits of work to include the installation and termination of extra low voltage cables and instrumentation in hazardous areas; and

(b) continue to use the word “technician” in the Board’s registration and licensing classes.

Electrical appliance service person (endorsed)

The Board has decided to retain the registration class of electrical appliance service person (endorsed) in its present form along with the requirements/standards for registration and associated limits of work.

Electrical appliance service person

The Board has decided to retain the registration class of electrical appliance service person in its present form along with the requirements/standards for registration and associated limits of work.

Line mechanic, cable jointer, substation maintainer

The Board has decided to:

(a) withdraw the existing registration class of line mechanic and replace it with three new classes of registration being:

- transmission line mechanic
- rail line mechanic
- distribution line mechanic

(b) define transmission line mechanic work as electric line work on the National Grid irrespective of voltage levels;

(c) define rail line mechanic work as work on electric line assets owned by Kiwi Rail Holdings Limited irrespective of voltage levels;

(d) define distribution line mechanic work as all other work, including sub transmissions, on electric lines to that stated in (b) and (c) above irrespective of voltage levels;

(e) extend the scope of prescribed electrical work a distribution line mechanic will be able to undertake by enabling a distribution line mechanic to work past the termination point of an electric line in an installation to ensure the testing requirements for an electric line are fully satisfied.

The point at which the testing would be carried out would be the first point "downstream" of the electric line termination point in an installation (i.e. at a revenue meter box or an MEN switchboard);

(f) permit distribution line mechanics to do jointing of PVC electric line cables operating at voltages up to 400 volts.

(g) introduce a "fittings repair" endorsement to the registration class of distribution line mechanic which would enable holders of the endorsement to replace "mains entry boxes", "bell mouths", "main switches", "electric water storage heater elements" and "electric cooker elements"; and

(h) introduce a registration class of substation maintainer which will include the installation, connection, disconnection, replacement and reconnection of substation equipment irrespective of voltage levels.

Amended requirements/standards for the registration classes of line mechanic, cable jointer and substation maintainer are as follows:

| **Registration Class** | **Requirements/standards for registration** | **Limits of work** |
|---|---|---|
| **All classes of registration** | Every person seeking registration in any class of registration is required, as a prerequisite, to have satisfactorily completed | The types of work each class of registration is permitted to perform are as listed below, unless the work being carried out is specifically excluded from |

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| | instruction in safe working practices, testing, basic first aid and cardio-pulmonary resuscitation as approved by the Board. | the definition of prescribed electrical work by clause 2 of the First Schedule to the Electricity (Safety) Regulations 2010. |
| **Transmission line mechanic** | Completion of the New Zealand Certificate in Electricity Supply in Transmission Line Maintenance (Level 4) which will include Board approved pre-moderated capstone tests. | Work on electric lines which form part of the National Grid irrespective of voltage levels. |
| **Rail line mechanic** | Completion of a New Zealand Traction Rail Line Mechanic Level 4 Qualification which will include Board approved pre-moderated capstone tests. | Work on electric line assets owned by Kiwi Rail Holdings Limited irrespective of voltage levels |
| **Distribution line mechanic** | Completion of the New Zealand Certificate in Electricity Supply Line Mechanic Distribution (Level 4) which will include Board approved pre-moderated capstone tests. | With the exception of that relating to transmission and rail stated above, all other work, including sub transmissions, on electric lines irrespective of voltage levels.<br><br>The testing of electric lines up to the first point "downstream" of the electric line termination point in an installation (i.e. at a revenue meter box or an MEN switchboard).<br><br>The jointing of PVC electric line cables operating at voltages up to 400 volts. |
| **Distribution line mechanic (endorsed)** | Completion of the New Zealand Certificate in Electricity Supply Line Mechanic Distribution (Level 4) which will include Board approved pre-moderated capstone tests, and the New Zealand Certificate in Electricity Supply in Fault Response (Level 3) which will include Board approved pre-moderated capstone tests. | With the exception of that relating to transmission and rail stated above, all work, including sub transmissions, on electric lines irrespective of voltage levels.<br><br>The testing of the electric lines referenced above up to the first point "downstream" of the electric line termination point in an installation (i.e. at a revenue meter box or an MEN switchboard).<br><br>The jointing of PVC electric line cables operating at voltages up to 400 volts.<br><br>The replacement of "mains entry boxes", "bell mouths", |

| | | |
|---|---|---|
| | | "main switches", "electric water storage heater elements" and "electric cooker elements". |
| **Cable jointer** | Completion of the New Zealand Certificate in Electricity Supply (Cable Jointer High Voltage) (Level 4) which will include Board approved pre-moderated capstone tests. | All cable jointing on electric lines irrespective of voltage levels. |
| **Substation maintainer** | Completion of the New Zealand Certificate in Electricity Supply Substation Maintenance (Level 4) which will include Board approved pre-moderated capstone tests. | Install, connect, disconnect, replace and reconnect substation equipment irrespective of voltage levels. |

**Transitional provisions**

The Board has considered the question of transitional provisions in the context of its draft decisions and has decided that following any Gazetting of the decisions:

(a) any person aspiring to be registered in the registration classes of either mining electrician or mining electrical inspector must, in addition to being registered in the respective registration classes of electrician and electrical inspector, provide the Board with confirmation from a New Zealand Industry Training Organisation or an Australian Registered Training Organisation that the appropriate mining competencies for either registration class listed in Appendix A to this paper have been satisfactorily completed;

(b) the amended requirements relating to the registration class of electrical engineer will come into force thirty working days after any Gazetting;

(c) any person who is presently registered in the registration class of electrical engineer will retain the registration along with the present limits of work;

(d) the new registration classes of line mechanic (transmission, rail, distribution and distribution (endorsed), cable jointer and substation maintainer will come into force thirty working days after any Gazetting;

(e) the amended requirements relating to the registration classes of line mechanic (transmission, rail, distribution and distribution (endorsed), cable jointer and substation maintainer will come into force as and when the appropriate Level 4 Qualifications are registered on the National Qualifications Framework;

(f) any person wishing to be registered in any of the new registration classes of line mechanic (transmission, rail, distribution and distribution endorsed), cable jointer or substation maintainer prior to the availability of appropriate Level 4 Qualifications will be entitled to be registered on satisfying the existing Board Agreements with either the Infrastructure Industry Training Organisation, Transpower New Zealand Limited or Kiwi Rail Holdings Limited;

(g) all persons at present registered in the registration class of line mechanic will be re-registered in one (or more) of the new registration classes of line mechanic based on either previously held transmission, distribution or traction

line mechanic limitations or evidence of experience held by the Board.

(h) There will be no cost associated with any of the proposals contained in this paper relating to electrical installer, electrical service technician, line mechanic and cable jointer re-registrations.

**Comments sought on this discussion paper**

The Board would appreciate any comments about the implications and impact of the proposals in this discussion paper by 26 September 2014. Comments should be sent to:

The Registrar
Electrical Workers Registration Board
P O Box 10156
WELLINGTON

Or by e-mail to: info@ewrb.govt.nz

**Official Information Act 1982**

Please note that any submissions received by the Board will constitute 'official information' under the Official Information Act 1982. That Act is designed to give the people of New Zealand access to information, but with exceptions to preserve the public interest and personal privacy.

The Board will prepare a summary of submissions received, together with the Board's responses. This summary is intended for circulation to parties who have made submissions.

In providing your submission, please advise the Board if you have any objections to the release of your submission, and, if you do object, the parts of your submission that you want withheld, and the grounds, under the Official Information Act, for withholding them. The Board will carefully consider your reasons when preparing and releasing any summary, and in considering any formal Official Information Act requests that might be received in the future.

**Privacy Act 1993**

Any personal information that you supply to the Board in the course of making your submission will be used by the Board only in conjunction with the consideration of matters covered by this discussion paper.

Your name will be included in any summary unless you inform the Board that you do not wish your name to be included.

John Sickels
Registrar
9 August 2014

# Appendix One: Schedule of mining competencies

| Competency | Recognised Standard | NZ equivalent | Notes |
|---|---|---|---|
| Assess the fitness-for-purpose of hazardous areas explosion-protected equipment - coal mining | UEENEEM067A - Assess the fitness-for-purpose of hazardous areas explosion-protected equipment - coal mining | **24981 – Assess the fitness-for-purpose of explosive atmospheres legacy explosion-protected apparatus, L6, C8**<br><br>This unit standard is directly equivalent to Unit 2.22 *Assess the fitness-for-purpose of hazardous areas explosion-protected equipment* in the Australian/New Zealand Standard AS/NZS 4761.1:2008 *Competencies for working with electrical equipment in hazardous areas (EEHA) Part 1: Competency standards* and includes essential skills and knowledge as specified in the relevant clauses. It aligns with Australian Competency Standards *UEENEEM067A, UEENEEM068A* and *UEENEEM069A* from UEE07 Electrotechnology Training Package Version 3.1 (copyright Australian National Training Information Service). | Pre-requisites:<br>26740 - Demonstrate and apply intermediate underpinning knowledge of electrical apparatus in explosive atmospheres;<br>17068 - Conduct a conformity assessment of explosion-protected apparatus;<br>17075 - Conduct detailed inspection of electrical apparatus installations in explosive atmospheres;<br>24980 - Conduct audit of hazardous areas installations |

| Competency | Recognised Standard | NZ equivalent | Notes |
|---|---|---|---|
| Attend to breakdowns in hazardous areas - coal mining | UEENEEM019A - Attend to breakdowns in hazardous areas - coal mining | **17059 – Attend to breakdowns in explosive atmospheres, L4, C9**<br><br>This unit standard is directly equivalent to Unit 2.3 *Attend to breakdowns in hazardous areas* in the Australian/New Zealand Standard AS/NZS 4761.1:2008 *Competencies for working with electrical equipment in hazardous areas (EEHA) Part 1: Competency standards* and includes essential skills and knowledge as specified in the relevant clauses. It aligns with Australian Competency Standards *UEENEEM019A, UEENEEM020A*, *UEENEEM021A,* and *UEENEEM022A* from UEE07 Electrotechnology Training Package Version 3.1 (copyright Australian National Training Information Service). | Pre-requisite:<br>26740 - Demonstrate and apply intermediate underpinning knowledge of electrical apparatus in explosive atmospheres |
| Carry out overhaul and repair of explosion-protected equipment - coal mining | UEENEEM060A - Carry out overhaul and repair of explosion-protected equipment - coal mining | **24979 - Carry out overhaul and repair of explosion-protected apparatus, L4, C2**<br><br>This unit standard is directly equivalent to Unit 2.20 *Carry out overhaul and repair of* | Pre-requisite:<br>26740 - Demonstrate and apply intermediate underpinning knowledge of electrical apparatus in explosive atmospheres |

| Competency | Recognised Standard | NZ equivalent | Notes |
|---|---|---|---|
| | | *explosion-protected equipment* in the Australian/New Zealand Standard AS/NZS 4761.1:2008 *Competencies for working with electrical equipment in hazardous areas (EEHA) Part 1: Competency standards* and includes essential skills and knowledge as specified in the relevant clauses. It aligns with Australian Competency Standard *UEENEEM060A* from UEE07 Electrotechnology Training Package Version 3.1 (copyright Australian National Training Information Service). | |
| Conduct a conformity assessment of explosion-protected equipment - coal mining | UEENEEM035A - Conduct a conformity assessment of explosion-protected equipment - coal mining | **17068 – Conduct a conformity assessment of explosion-protected apparatus, L6, C9**<br><br>This unit standard is directly equivalent to Unit 2.9 *Conduct a conformity assessment of explosion-protected equipment* in the Australian/New Zealand Standard AS/NZS 4761.1:2008 *Competencies for working with electrical equipment in hazardous areas (EEHA) Part 1: Competency standards* and includes essential skills and knowledge as | Pre-requisite:<br>26740 - Demonstrate and apply intermediate underpinning knowledge of electrical apparatus in explosive atmospheres |

| Competency | Recognised Standard | NZ equivalent | Notes |
|---|---|---|---|
| | | specified in the relevant clauses. It aligns with Australian Competency Standards *UEENEEM035A, UEENEEM036A* and *UEENEEM037A* from UEE07 Electrotechnology Training Package Version 3.1 (copyright Australian National Training Information Service). | |
| Conduct audit of hazardous areas installations - coal mining | UEENEEM064A - Conduct audit of hazardous areas installations - coal mining | **24980 - Conduct audit of hazardous areas installations, L5, C3**<br><br>This unit standard is directly equivalent to Unit 2.21 *Conduct audit of hazardous areas installations* in the Australian/New Zealand Standard AS/NZS 4761.1:2008 *Competencies for working with electrical equipment in hazardous areas (EEHA) Part 1: Competency standards* and includes essential skills and knowledge as specified in the relevant clauses. It aligns with Australian Competency Standards *UEENEEM064A, UEENEEM065A* and *UEENEEM066A* from UEE07 Electrotechnology Training Package Version 3.1 (copyright Australian National | Pre-requisite:<br>26740 - Demonstrate and apply intermediate underpinning knowledge of electrical apparatus in explosive atmospheres |

| Competency | Recognised Standard | NZ equivalent | Notes |
|---|---|---|---|
| | | Training Information Service). | |
| Conduct detailed inspection of hazardous areas installations - coal mining | UEENEEM043A - Conduct detailed inspection of hazardous areas installations - coal mining | **17075 - Conduct detailed inspection of electrical apparatus installations in explosive atmospheres, L5, C2**<br><br>This unit standard is directly equivalent to Unit 2.12 *Conduct detailed inspection of hazardous areas installations* in the Australian/New Zealand Standard AS/NZS 4761.1:2008 *Competencies for working with electrical equipment in hazardous areas (EEHA) Part 1: Competency standards* and includes essential skills and knowledge identified within the relevant clauses. It aligns with Australian Competency Standards *UEENEEM043A, UEENEEM044A, UEENEEM045A* and *UEENEEM046A* from UEE07 Electrotechnology Training Package Version 3.1 (copyright Australian National Training Information Service). | Pre-requisite:<br>26740 - *Demonstrate and apply intermediate underpinning knowledge of electrical apparatus in explosive atmospheres*<br><br>Candidates must be an Electrical Inspector holding current registration and a practising license with the Electrical Workers Registration Board (EWRB).<br><br>Recommended skills and knowledge:<br>17056 - Install explosion-protected electrical apparatus and wiring systems in hazardous areas;<br>or 17058 - Maintain apparatus in explosive atmospheres;<br>or 17071 - Plan electrical installations for explosive atmospheres. |
| Conduct testing of hazardous areas installations - coal mining | UEENEEM038A - Conduct testing of hazardous areas installations - coal mining | **17073 - Conduct testing of electrical apparatus in explosive atmospheres installations, L4. C4** | Pre - requisite:<br>26740, Demonstrate and apply intermediate underpinning knowledge of electrical apparatus |

| Competency | Recognised Standard | NZ equivalent | Notes |
|---|---|---|---|
| | | This unit standard is directly equivalent to Unit 2.10 *Conduct testing of hazardous areas installations* in the Australian/New Zealand Standard AS/NZS 4761.1:2008 *Competencies for working with electrical equipment in hazardous areas (EEHA) Part 1: Competency standards* and includes essential skills and knowledge as specified in the relevant clauses. It aligns with Australian Competency Standards *UEENEEM038A, UEENEEM039A, UEENEEM040A* and *UEENEEM041A* from UEE07 Electrotechnology Training Package Version 3.1 (copyright Australian National Training Information Service). | in explosive atmospheres |
| Design explosion-protected electrical systems - Coal mining | UEENEEM075A - Design explosion-protected electrical systems - Coal mining | **17072 - Design explosion-protected electrical systems and installations, L6, C12**<br><br>This unit standard is directly equivalent to Unit 2.18 *Design explosion-protected electrical systems and installations* in the Australian/New Zealand Standard AS/NZS | Pre-requisite:<br>26742, - Demonstrate underpinning knowledge of permanently-installed gas detection apparatus in explosive atmospheres |

| Competency | Recognised Standard | NZ equivalent | Notes |
|---|---|---|---|
| | | 4761.1:2008 *Competencies for working with electrical equipment in hazardous areas (EEHA) Part 1: Competency standards* and includes essential skills and knowledge as specified in the relevant clauses. It aligns with Australian Competency Standards *UEENEEM057A, UEENEEM058A, UEENEEM059A* and *UEENEEM075A* from UEE07 Electrotechnology Training Package Version 3.1 (copyright Australian National Training Information Service). | |
| Develop and manage maintenance programs for hazardous areas electrical equipment - coal mining | UEENEEM047A - Develop and manage maintenance programs for hazardous areas electrical equipment - coal mining | **17070 - Develop and manage maintenance programmes for explosive atmospheres installations, L6, C8**<br><br>This unit standard is directly equivalent to Unit 2.13 *Develop and manage maintenance programs for hazardous areas electrical equipment* in the Australian/New Zealand Standard AS/NZS 4761.1:2008 *Competencies for working with electrical equipment in hazardous areas (EEHA) Part 1: Competency standards* and includes essential skills and | Pre - requisite:<br>17058, Maintain apparatus in explosive atmospheres |

| Competency | Recognised Standard | NZ equivalent | Notes |
|---|---|---|---|
| | | knowledge as specified in the relevant clauses. It aligns with Australian Competency Standards *UEENEEM047A, UEENEEM048A, UEENEEM049A* and *UEENEEM050A* from UEE07 Electrotechnology Training Package Version 3.1 (copyright Australian National Training Information Service). | |
| Install explosion-protected equipment and wiring systems - coal mining | UEENEEM023A - Install explosion-protected equipment and wiring systems - coal mining | **17056 - Install explosion-protected electrical apparatus and wiring systems in hazardous areas, L4, C9**<br><br>This unit standard is directly equivalent to Unit 2.5 *Install explosion-protected equipment and wiring systems in hazardous areas* in the Australian/New Zealand Standard AS/NZS 4761.1:2008 *Competencies for working with electrical equipment in hazardous areas (EEHA) Part 1: Competency Standards* and includes essential skills and knowledge as specified in the relevant clauses. It aligns with Australian Competency Standards *UEENEEM023A,* | Pre-requisite:<br>17059, - Attend to breakdowns in explosive atmospheres |

| Competency | Recognised Standard | NZ equivalent | Notes |
|---|---|---|---|
| | | *UEENEEM024A, UEENEEM025A* and *UEENEEM026A* from UEE07 Electrotechnology Training Package Version 3.1 (copyright Australian National Training Information Service). | |
| Maintain equipment in hazardous areas - coal mining | UEENEEM027A - Maintain equipment in hazardous areas - coal mining | **17058 - Maintain apparatus in explosive atmospheres, L4, C9**<br><br>This unit standard is directly equivalent to Unit 2.7 *Maintain equipment in hazardous areas* in the Australian/New Zealand Standard AS/NZS 4761.1:2008 *Competencies for working with electrical equipment in hazardous areas (EEHA) Part 1: Competency standards* and includes essential skills and knowledge as specified in the relevant clauses. It aligns with Australian Competency Standards *UEENEEM027A, UEENEEM028A, UEENEEM029A* and *UEENEEM030A* from UEE07 Electrotechnology Training Package Version 3.1 (copyright Australian National Training Information Service) | Pre-requisite:<br>17059, - Attend to breakdowns in explosive atmospheres |

| Competency | Recognised Standard | NZ equivalent | Notes |
|---|---|---|---|
| Maintain operation of electrical mining equipment and systems | UEENEEG118A - Maintain operation of electrical mining equipment and systems | No direct equivalent | |
| Overhaul and repair of explosion-protected equipment - coal mining | UEENEEM031A - Overhaul and repair of explosion-protected equipment - coal mining | **24987 - Establish, arrange and verify overhaul and repair of explosion-protected apparatus, L5, C5**<br><br>This unit standard is directly equivalent to Unit 2.8 *Overhaul and repair of explosion-protected equipment* in the Australian/New Zealand Standard AS/NZS 4761.1:2008 *Competencies for working with electrical equipment in hazardous areas (EEHA) Part 1: Competency standards* and includes essential skills and knowledge as specified in the relevant clauses. It aligns with Australian Competency Standards *UEENEEM031A, UEENEEM032A, UEENEEM033A* and *UEENEEM034A* from UEE07 Electrotechnology Training Package Version 3.1 (copyright Australian National Training Information Service). | Pre-requisite:<br>26740 - Demonstrate and apply intermediate underpinning knowledge of electrical apparatus in explosive atmospheres |

| Competency | Recognised Standard | NZ equivalent | Notes |
|---|---|---|---|
| Plan electrical installations in hazardous areas - Coal mining | UEENEEM074A - Plan electrical installations in hazardous areas - Coal mining | **17071 - Plan electrical installations for explosive atmospheres, L5, C8**<br><br>This unit standard is directly equivalent to Unit 2.17 *Plan electrical installations for hazardous areas* in the Australian/New Zealand Standard AS/NZS 4761.1:2008 *Competencies for working with electrical equipment in hazardous areas (EEHA) Part 1: Competency standards* and includes essential skills and knowledge as specified in the relevant clauses. It aligns with Australian Competency Standards *UEENEEM054A, UEENEEM055A, UEENEEM056A* and *UEENEEM074A* from UEE07 Electrotechnology Training Package Version 3.1 (copyright Australian National Training Information Service). | Pre-requisite:<br>26740 - Demonstrate and apply intermediate underpinning knowledge of electrical apparatus in explosive atmospheres<br><br>Recommended skills and knowledge:<br>4993 - Plan implementation of, manage, and review small to medium sized electrotechnology projects. |