# **Engineering System Integrity Electrical Network Safety Rules**

**Engineering Procedure Electrical Distribution Unit** 

**Personnel Competency** 

# PR D 78701 Personnel Certifications – Electrical

Version 4.0

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Approved Associate Director Authorised Engineering Technical
by: Electrical Distribution Unit by: Publications Manager
Engineering System Integrity System Integrity

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# **Document control**

Version	Date	Author/Prin.Eng.	Summary of change
3.0	21 November 2018	Brian Lidbetter	Definitions Workplace Assessor and EDU Manager
			Inclusion of Accredited Safety Assistant for Switching Operations AES23
			Changes to Note 2 Authorised Operator
			Tertiary requirements for AES06
			Minor changes throughout document
3.1	26 February 2019	Chris Leung	Update references, roles and position
			names to reflect the current organisation
3.2	22 July 2019	N Loveday	Update to clarify AES08 can hold a
			substation access permit
			Includes new accreditation for Substation
			Permit Holder
3.3	1 July 2021	R Bahl	Issued following Trial
3.4	1 February 2022	ENSR Project	Reviewed as part of the ENSR Project.
		Team	
4.0	17 April 2025	W. Halls	Merged with SP D 79048 and SP D 79055
		P. Woods	Added 3 new "Accredited Tree Trimmer"
			accreditations

# **Summary of changes from previous version**

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Merged with SP D 79048 and SP D 79055
Added 3 new "Accredited Tree Trimmer" accreditations

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# 1 Purpose

The purpose of this document is to define the minimum electrical safety competencies for all accreditations and certifications required for workers who undertake work on the Sydney Trains electrical distribution network and 1500 Volt Rail Traction system. It documents the business management of Electrical Competency within Sydney Trains including issue, suspension and withdrawal.

This document must be read and understood before applying for certifications as detailed in this document at section 13.

# 2 Overview

All persons must have the appropriate competencies to operate, work near or on/within electrical equipment and be authorised for their duties to be carried out in adherence to the Rail Safety National Law, Transport for NSW (TfNSW) standards and Sydney Trains documents.

Persons working or reviewing work methods, near or on/within electrical equipment, shall be trained and accredited both technically and as per the ENSR for the equipment and work that they are to perform.

These competencies are non-transferable and must be obtained and maintained to perform hazardous work on or near electrical infrastructure.

"Certified" in this context means a person holding one or more of the competencies listed in table 1, at section 13.

# 3 Definitions

The terms used throughout this document are defined in in Definitions and Conventions for Electrical Safety published on RAILSAFE.

# 4 Scope

This document applies to all "workers" engaged to perform or supervise "electrical work" on Sydney Trains Electrical Network. Work on Low Voltage Installations shall be in accordance with the requirements set by the Department of Fair Trading NSW.

#### **NOTE**

In accordance with Rail Safety National Law (NSW), workers performing the work functions associated with the certifications in this document are performing 'rail safety work'. The prerequisite for all certification in this document is TLIF0020 Safely access the rail corridor.

# 5 Background

This procedure sets out the Electrical Certifications that persons must hold in order to carry out particular functions. This procedure nominates the requirements for initial certification, the requirements for recertification and, where applicable, the maximum allowable intervals for recertification.

The specific details provided in this Procedure relating to the certification of Electrical Certifications are to be read in conjunction with, and in addition to *PRO14 SMS Training and Competence*.

Electrical Certifications are a subset of the total set of personnel Certifications. Therefore, a reference to being Authorised for an electrical function is a reference to being certified for that function as stipulated under the respective parts of Specific certifications of this procedure.

Where a specific function is listed under a certification in this Procedure, that function must only be carried out by an appropriately certified Person. Such functions are referred to as "functions for which certification is required".

Electrical Certifications are independent of a person's grading or classification and are valid for the duration of the person's employment with the organisation to whom they're certified with. A person may hold several Certifications at the same time provided the person continues to be re-certified in each.

#### **NOTE**

Not addressed in this document are other Sydney Trains/Transport for NSW (TfNSW) competencies, qualifications or safe working requirements, including but not limited to:

- Health Assessment Categories for Rail Safety Workers
- Rail Industry Worker (RIW) card course for people working within the rail corridor
- WorkCover NSW White Card (General Construction Industry Card) and High Risk Work Licences requirements.

# 6 Responsibility

**Persons** whose functions include electrical work requiring Certification are responsible for:

- a) undertaking only those tasks for which they have been trained and hold a current valid certification
- informing their immediate Supervisor, two months prior to a certification lapsing, if they have not been notified of any recertification planned for them in that competency.

**Certifying Authorities** are responsible for ensuring the written confirmation of all functions competently performed and required by workers as part of the assessment system are correctly validated for each function by an accredited workplace assessor or the workers' Supervisors, prior to certifying or recertifying those workers.

#### **Organisations with Certified Persons** are responsible for:

- a) providing systems to ensure that appropriate training, recording of results and certification are maintained for each worker carrying out functions requiring those certifications
- b) ensuring that each worker carrying out functions requiring electrical certification holds a valid Certificate of Competency for that function.

#### **NOTE**

The relevant TSS Manager engaging a PCBU shall ensure that Sydney Trains/TfNSW engineering, quality and safety standards are being met by the PCBU and that contract workers are electrically certified as per this document for the assigned task.

### 6.1 Assessments and Training Materials

Non-TfNSW organisations shall provide a copy of their initial and any future updated competency management and assessment material to the Electrical Distribution Unit for endorsement. Non-TfNSW organisations that have persons certified with an Electrical Certification shall conduct an external third party audit of their competency management and assessment system against this document when requested by the Electrical Distribution Unit. The audit report and action plan shall address any recommendations/non-conformances to the Electrical Distribution Unit.

Refer to the Auditing and Assurance Standards Board (AUASB) for more information.

# 6.2 Certificate of Competency

The Associate Director Electrical Distribution Unit, Principle Electrical Safety Assessor or, an Electrical Authorising Officer of Electrical Distribution Unit, is presented with and considers evidence that a person has been deemed competent to perform functions of the Certifications detailed in Section 13 of this document.

Once Authorised, certification is issued typically in the form of a TfNSW Rail Safety Worker Card (commonly referred to as the "Gold Card") or a Rail Industry Workers (RIW) Card.

Certified Persons are issued with a Rail Safety Worker Card or Rail Industry Worker Card showing the specific certifications and if applicable a supporting letter detailing specific work functions for which they are certified.

When carrying out functions for which Certification is required, persons must be able to produce their valid Rail Safety Worker Card or Rail Industry Worker Card.

Refer to flowchart Appendix A Certification Process outlining how to obtain an electrical certification.

# 7 Persons undergoing training

## 7.1 Supervision

Unless otherwise stipulated for a specific certification, a person undergoing training to become a Certified Person may perform work otherwise restricted to a Certified Person, subject to the following conditions:

- a) The work is carried out under the **direct/constant** supervision of another person who is certified to carry out the function concerned.
- b) The Certified Person supervising the work is responsible for the safety of the person undergoing training and shall implement appropriate controls.
- c) The supervising certified Person, when deciding on appropriate controls to be implemented, shall consider the level of competence and experience of the person undergoing training, the nature and complexity of the work to be carried out, and the risks pertaining to the work to be undertaken. Such controls may include, for example, increasing the minimum electrical Safe Approach Distances (for Authorised Persons) that will be applicable for the person undergoing training.

The person undergoing training may fill out but shall not approve, check, issue, or be in charge of, any ENSR documents unless currently certified to do so.

# 7.2 Management

The person undergoing training must be identified by their Technically Assured Organisation (TAO) Manager or Supervisor as undergoing training to become certified. The person shall be undertaking the work in order to achieve the competence required to become a certified Person.

#### **NOTE**

Further information and guidance regarding the supervision of persons undergoing training is available in the "Supervision Practice Standard for Apprentices in the Electrical Industry".

# 7.3 Delegation of authority to certify

The Associate Director Electrical Distribution Unit may delegate a person to certify persons. The requirements of a specific certification stipulate that the Associate Director Electrical Distribution Unit may delegate a particular class of person as the "Certifying Authority" for the respective workers. This does not preclude the delegation of this authority to others.

All delegations of authority granted by the Associate Director Electrical Distribution Unit to certify persons are reviewed on an annual basis.

The Associate Director Electrical Distribution Unit may delegate a person to assess persons with respect to switching operations or safe entry into substation functions.

# 8 Certification

## 8.1 Suspension and withdrawal of certification

Following an electrical safety incident, a person's Certification may be suspended while the matter is investigated. The suspension will be in writing issued by the Associate Director Electrical Distribution Unit or Principle Electrical Safety Assessor.

The following persons may advise the Associate Director Electrical Distribution Unit to suspend a person:

- an ICON Electrical System Operator, or
- an Electrical Authorising Officer employed by Sydney Trains, Electrical Distribution Unit.

Formal written suspension of a person's electrical certification will be forwarded to the individual and their manager by the Principal Electrical Assessor EDU.

A suspension will remain in force until all formal investigations have been completed

If the investigation reveals no breach of the ENSR documents, the person's Certification may be restored by the officer who suspended it or by an Electrical Authorising Officer.

If the investigation reveals human factors are identified as a contributing factor to the incident, a behavioural competency assessment coordinated by the Associate Director Electrical Distribution Unit shall be undertaken as part of the recertification.

For recertification, an assessment of the withdrawn Certification should be undertaken within four weeks by an EDU Electrical Authorising Officer.

After four weeks, if a person has failed to be re-certified, they shall have a new Certificate of Competency issued, precluding the function that was withdrawn.

A person whose Certification in a particular function has been suspended or withdrawn must not perform that particular function until the certification has been restored, or the person has been re-certified, regardless of what is shown on the person's Certificate of Competency.

Refer to flowchart Appendix B Post Incident Recertification Process of persons accredited.

#### 8.2 Re-Certification

A certified person must be regularly assessed to have the required technical knowledge and experience, the authorised person must be regularly assessed to have the required technical knowledge and experience.

The date from which the next required recertification is calculated is based upon the original due date and not the date of the assessment.

Where a person is deemed to be not yet competent, the respective Electrical Authorising Officer shall arrange either:

• further assessments to ensure that the person demonstrates continued competency, or

to have that person's Certificate of Competency withdrawn, or replace it with one clearly indicating what competency or competencies are no longer valid.

Persons not currently certified shall not be put forward for recertification. Consult with the Electrical Distribution Unit for certification.

For TfNSW employees, Log Books are to be utilised and presented as evidence of maintaining currency of competency for each of the listed electrical certifications before an individual is recertified. Further information can be found in *PR D 78704 Electrical Log Book Procedure*.

# 9 Requirements for all certifications

The following certification requirements apply to all Personnel Competencies listed in this document. Refer to individual competencies for additional information.

Where a specific certificate or competency standard unit (CSU) is quoted in the subsequent tables of this Section for the specific certifications, the certificate or CSU referred to is the current version at the time of publishing this Procedure. If an updated version of the certificate or CSU is adopted in the National Training Package, then the updated certificate or CSU version will apply for initial certification. The updated certificate or CSU version does not apply for recertification.

If an applicant applying for initial certification holds an outdated version of the certificate or CSU, then to have that certificate or CSU recognised as equivalent to the current version, a "document" issued by an Australian Skills Quality Authority (ASQA) Registered Training Organisation (RTO) indicating the person has fulfilled the requirement of the competency indicated in this Procedure is required.

# 10 Specific certifications

The following table lists the competencies for work related to electrical assets.

**Table 1: Personnel Competencies** 

Section	Competency	Ellipse code	Organisation
			See Note below
Electrical work	k		
13.1 A	Accredited Aerial Line (HV & LV) Worker	MEL56	External
13.2 A	Accredited OHW Assembler	MEL55	External
13.3 A	Accredited OHW Rigger	MEL54	External
13.4 A	Accredited OHW Installer	MEL52	External
13.5 A	Accredited OHW Worker	MEL53	External
13.6 A	Accredited Electrolysis Interference Tester	AES02	TfNSW
13.7 A	Accredited Cable Jointer	AES13	TfNSW & External
13.8 C	Overhead Worker	AES04	TfNSW
13.9 A	Authorised Overhead Traction Worker	AES15	TfNSW
13.10 A	Authorised Traction Operator	AES16	TfNSW
13.11 A	Authorised Officer (Mains)	AES06	TfNSW
13.12 A	Authorised Attendant	AES05	TfNSW
13.13 A	Authorised Operator	AES08	TfNSW
13.14 A	Authorised Officer (Substations)	AES07	TfNSW
13.15 E	Electrical Authorising Officer	AES14	TfNSW
13.16 A	Authorised Person (Low Voltage)	AES19	TfNSW
13.17 E	Electrical System Operator	AES22	TfNSW
	Accredited Safety Assistant for Switching Operations	AES23	TfNSW
Non-electrical	l work		
13.19 A	Accredited Electrical Permit Holder	ME161	TfNSW & External
13.20 A	Accredited for Entry	AES03	TfNSW
13.21 A	Accredited Substation Permit Holder	AES24	External
13.22 A	Accredited Electrical Tree Trimmer (Climber)	MEL57	External
13.23 A	Accredited Electrical Tree Trimmer (EWP)	MEL58	External
13.24 A	Accredited Electrical Tree Trimmer (Ground)	MEL59	External



TfNSW = The accreditation can be held only by TfNSW employees

External = External contractors engaged by TfNSW.

# 10.1 Accredited Aerial Line (HV and LV) Worker (ELLIPSE Resource Code: MEL56)

In order to be eligible for certification or recertification as an Accredited Aerial Line (HV and LV) Worker, a person shall meet all the requirements in Table 2.

Table 2: Requirements for Accredited Aerial (HV and LV) Worker

Requirement Identifier	Requirement Description	Evidence required	Recertification period
A	Certificate III in ESI – Power Systems – Rail Traction (National Qualification No UET30719), and UETTDRDP12 "Maintain overhead energised LV conductors and cables" or Certificate III in ESI – Power Systems – Distribution Overhead (National Qualification No UET30619)	Certificates	None
В	Resuscitation.	Practical competency assessment	1 Year
С	Releasing a person from live LV electrical apparatus.	Practical competency assessment	1 Year
D	Releasing a person from a pole or structure.	Practical competency assessment	1 Year
E	Rescuing a person from an elevating work platform.	Practical competency assessment	1 Year
F	Use of a Controlled Descent device.	Practical competency assessment	1 Year
G	Appropriate knowledge of the ENSR. (See Note 1.)	Examination Result	1 Year
Н	Assessment of the person's ability to perform the functions of an Accredited Aerial Line (HV and LV) Worker.  This Assessment shall be carried out by the person's Supervisor who shall either:  a) be a Workplace Assessor and hold a Certificate III in ESI – Power Systems – Distribution Overhead (National Qualification No UET30619) or Certificate III in ESI – Power Systems – Rail Traction (National Qualification No UET30719) Certificate III in Electricity Supply Industry – Rail Traction (National Qualification No. UET30712)  or  b) obtain the services of another Workplace Assessor and Certificate III qualified line worker as described immediately above.  This Assessment shall be carried out in accordance with the organisation's competency management and assessment system that is developed and complies with the AMB Competency Management Standards.	Assessment	1 Year

#### **NOTE**

Successful completion of the "Introduction to Electrical Network Safety Rules (ENSR EJ22)" course run by TfNSW Learning & Development (L&D) satisfies the initial certification requirements, whereas successful completion of the written examination (EL50) satisfies the recertification requirement.

The person is to be initially certified, and re-certified annually, on the evidence listed.

An Accredited Aerial Line (HV and LV) Worker is permitted to perform all of the functions listed below, in accordance with the ENSR:

- a) work to the Safe Approach Distances (SADs) specified for "Accredited Persons" in *PR D 79049 Safe Approach Distances (SADs)*, in relation to AC nominal voltages only.
- b) perform Safety Observer duties in accordance with PR D 78700 Section 5.4 Safety Observer
- c) test for continuity/live within a Permit area
- d) work without supervision on earthed high voltage aerial lines
- e) work without supervision on low voltage aerial lines, **excluding work on live LV** aerial lines.

# 10.2 Accredited OHW Assembler (ELLIPSE Resource Code: MEL55)

In order to be eligible for certification or recertification as an Accredited OHW Assembler, a person shall meet all the requirements in Table 3.

**Table 3: Requirements for Accredited OHW Assembler** 

Requirement Identifier	Requirement Description	Evidence required	Recertification period
Α	Appropriate knowledge of the ENSR. (See Note)	Examination Result	1 Year
В	Use of Controlled Descent Device.	Practical competency assessment	1 Year
С	Resuscitation.	Practical competency assessment	1 Year
D	Establishment of a training plan that has the intent of assuring the person attains a Certificate III in Electricity Supply Industry – Rail Traction (National Qualification No. UET30712) within an agreed timeframe.	Submit training plan to Associate Director Electrical Distribution Unit	1 Year The Associate Director Electrical Distribution Unit, or nominee

#### **NOTE**

Successful completion of the "Introduction to Electrical Network Safety Rules (ENSR EJ22)" course run by TfNSW L&D satisfies the initial certification requirements, whereas successful completion of the written examination (EL50) satisfies the recertification requirement.

The person is to be initially certified, and recertified annually, on the evidence listed.

An Accredited OHW Assembler is permitted to perform the following functions, in accordance with the ENSR:

- a) work to the Safe Approach Distances (SADs) specified for "Accredited Persons" in *PR D 79049 Safe Approach Distances (SADs)*, in relation to DC nominal voltages only.
- work at heights on rail-connected 1500 Volt overhead wiring, under the general intermittent supervision of an Authorised Overhead Traction Worker, Accredited OHW Rigger, Accredited OHW Installer, or Accredited OHW Worker

The work performed by an Accredited OHW Assembler excludes:

- a) dropping wires
- b) performing tasks involving lifting wire weight, pulling against radial load or rigging against conductor or line tension
- c) running wires
- d) installing section insulators.

An Accredited OHW Assembler is considered to be in-training to become an Accredited OHW Worker.

A job-specific Safe Work Method Statement (SWMS) is required to be prepared and approved in accordance with the ENSR requirements for all activities carried out by the Accredited OHW Assembler that involve the following situations:

- the OHW tension length that is being worked on includes OHW that is outside the electrically safe work area specified on the Electrical Permit to Work under which the work is being performed
- the electrically safe work area specified on the Electrical Permit to Work under which the work is being performed does not include the OHW on the track/s immediately adjacent to the track on which the OHW is being installed
- whenever special instructions relating to live equipment are included on the Electrical Permit to Work under which the work is being performed.

# 10.3 Accredited OHW Rigger (ELLIPSE Resource Code: MEL54)

In order to be eligible for certification or recertification as an Accredited OHW Rigger, a person shall:

- a) be an Accredited OHW Assemble
- b) meet all the requirements in Table 4.

**Table 4: Requirements for Accredited OHW Rigger** 

Requirement Identifier	Requirement Description	Evidence required	Recertification period
A	Hold a national licence to perform high risk work in the class of Rigging, e.g. hold either of the following high risk work licences issued by SafeWork NSW:  Basic rigging (RB), or Intermediate rigging (RI), or Advanced rigging (RA).	Licence	None (provided Licence is current)
В	Appropriate knowledge of the ENSR. (See Note)	Examination Result	1 Year
С	Use of Controlled Descent Device.	Practical competency assessment	1 Year
D	Resuscitation.	Practical competency assessment	1 Year
E	Establishment and approval of an agreed training plan that has the intent of assuring the person attains a Certificate III in ESI – Power Systems – Rail Traction (National Qualification No UET30719) within an agreed timeframe.	Submit training plan to Associate Director Electrical Distribution Unit	1 Year The Associate Director Electrical Distribution Unit, or nominee

#### **NOTE**

Successful completion of the "Introduction to Electrical Network Safety Rules (ENSR EJ22)" course run by TfNSW L&D satisfies the initial certification requirements, whereas successful completion of the written examination (EL50) satisfies the recertification requirement.

The person is to be initially certified, and recertified annually, on the evidence listed.

An Accredited OHW Rigger is permitted to perform, in accordance with the ENSR, the following functions on the rail-connected 1500 Volt overhead wiring system:

- a) work to the Safe Approach Distances (SADs) specified for "Accredited Persons" in PR D 79049 Safe Approach Distances (SADs), in relation to DC nominal voltages only
- b) all functions of the Accredited OHW Assembler, without supervision
- c) dropping wires
- d) tasks involving lifting wire weight, pulling against radial load or rigging against conductor or line tension

Functions (c) and (d) are to be performed under the general intermittent supervision of an Accredited Overhead Traction Worker, Accredited OHW Worker or Accredited OHW Installer.

The work performed by an Accredited OHW Rigger excludes the installation of section insulators.

An Accredited OHW Rigger is considered to be in training to become an Accredited OHW Worker.

A job-specific Safe Work Method Statement is required to be prepared and approved in accordance with the ENSR requirements for all activities carried out by the Accredited OHW Rigger that involve the following situations:

- the OHW tension length that is being worked on includes OHW that is outside the electrically safe work area specified on the Electrical Permit to Work under which the work is being performed
- the electrically safe work area specified on the Electrical Permit to Work under which the work is being performed does not include the OHW on the track/s immediately adjacent to the track on which the OHW is being installed
- whenever special instructions relating to live equipment are included on the Electrical Permit to Work under which the work is being performed.

# 10.4 Accredited OHW Installer (ELLIPSE Resource Code: MEL52)

In order to be eligible for certification or recertification as an Accredited OHW Installer, a person shall meet all the requirements in Table 5.

Table 5: Requirements for Accredited OHW Installer

Requirement Identifier	Requirement Description	Evidence required	Recertification period
A	Successfully completed a:  Linesman's Certificate issued by the former Department of Energy and supported by evidence of continuous relevant work experience  or  Certificate III in ESI – Power Systems – Transmission Overhead (National Qualification UET30519)  or  Certificate III in ESI – Power Systems – Distribution Overhead (National Qualification No UET30619)	Certificate issued by RTO	None
В	Appropriate knowledge of the ENSR. (See Note)	Examination Result	1 Year
С	Use of Controlled Descent Device.	Practical competency assessment	1 Year
D	Resuscitation.	Practical competency assessment	1 Year
E	Establishment of a training plan that has the intent of assuring the person attains a Certificate III in ESI – Power Systems – Rail Traction (National Qualification No UET30719) within an agreed timeframe.	Submit training plan to Associate Director Electrical Distribution Unit	1 Year The Associate Director Electrical Distribution Unit, or nominee

#### **NOTE**

Successful completion of the "Introduction to Electrical Network Safety Rules (ENSR EJ22)" course run by TfNSW L&D satisfies the initial certification requirements, whereas successful completion of the written examination (EL50) satisfies the recertification requirement.

The person is to be initially certified, and recertified annually, on the evidence listed.

An Accredited OHW Installer is permitted to perform, in accordance with the ENSR, the following functions on the rail-connected 1500 Volt overhead wiring system:

- a) work to the Safe Approach Distances (SADs) specified for "Accredited Persons" in *PR D 79049 Safe Approach Distances (SADs)*, in relation to DC nominal voltages only
- b) all the functions of the Accredited OHW Rigger

c) run wires under the general intermittent supervision of an Authorised Overhead Traction Worker or Accredited OHW Worker.

The work performed by an Accredited OHW Installer **excludes** the installation of section insulators.

An Accredited OHW Installer is considered to be in training to become an Accredited OHW Worker.

A job-specific Safe Work Method Statement is required to be prepared and approved in accordance with the ENSR requirements for all activities carried out by the Accredited OHW Installer that involve the following situations:

- the OHW tension length that is being worked on includes OHW that is outside
  the electrically safe work area specified on the Electrical Permit to Work under
  which the work is being performed
- the electrically safe work area specified on the Electrical Permit to Work under which the work is being performed does not include the OHW on the track/s immediately adjacent to the track on which the OHW is being installed
- whenever special instructions relating to live equipment are included on the Electrical Permit to Work under which the work is being performed.

# 10.5 Accredited OHW Worker (ELLIPSE Resource Code: MEL53)

In order to be eligible for certification or recertification as an Accredited OHW Worker, a person shall meet all the requirements in Table 6.

The person is to be initially certified, and recertified annually, on the evidence listed.

**Table 6: Requirements for Accredited OHW Worker** 

Requirement Identifier	Requirement Description	Evidence required	Recertification period
A	Certificate III in ESI – Power Systems – Rail Traction (National Qualification No UET30719)	Certificate issued by RTO	None
В	Releasing a person from live LV electrical apparatus.	Practical competency assessment	1 Year
С	Resuscitation.	Practical competency assessment	1 Year
D	Rescuing a person from a pole or structure.	Practical competency assessment	1 Year
E	Rescuing a person from an elevating work platform.	Practical competency assessment	1 Year
F	Use of Controlled Descent Device.	Practical competency assessment	1 Year
G	Appropriate knowledge of the ENSR. (See Note)	Examination Result	1 Year
Н	Assessment of the person's ability to perform the functions of an Accredited OHW Worker.	Assessment	1 Year
	This Assessment shall be carried out by the person's Supervisor who shall either:		
	be a Workplace Assessor and hold a Certificate III in Electricity Supply Industry – Rail Traction		
	or		
	obtain the services of another Workplace Assessor and Certificate III qualified line worker as described immediately above.		
	This Assessment shall be carried out in accordance with the organisation's competency management and assessment system that is developed and complies with the AMB Competency Management Standards.		

#### **NOTE**

Successful completion of the "Introduction to Electrical Network Safety Rules (ENSR EJ22)" course run by TfNSW L&D satisfies the initial certification requirements, whereas successful completion of the written examination (EL50) satisfies the recertification requirement.

The Accredited OHW Worker certifying and recertifying authority is the Associate Director Electrical Distribution Unit (delegated to the Electrical Authorising Officer). An Accredited OHW Worker is permitted to perform, in accordance with the ENSR:

- work to the Safe Approach Distances (SADs) specified for "Accredited Persons" in PR D 79049 Safe Approach Distances (SADs), in relation to DC nominal voltages only
- b) perform Safety Observer duties in accordance with PR D 78700 Section 5.4 Safety Observer
- c) test for continuity/live within Permit area
- d) perform testing of OHW Structure to Rail Bonding
- e) work without supervision on rail connected 1500 Volt Overhead Wiring in accordance with the ENSR and when the work is associated with an approved design.

A job-specific Safe Work Method Statement is required to be prepared and approved in accordance with the ENSR requirements for all activities carried out by the Accredited OHW Worker that involve the following situations:

- the OHW tension length that is being worked on includes OHW that is outside the electrically safe work area specified on the Electrical Permit to Work under which the work is being performed
- the electrically safe work area specified on the Electrical Permit to Work under which the work is being performed does not include the OHW on the track/s immediately adjacent to the track on which the OHW is being installed
- whenever special instructions relating to live equipment are included on the Electrical Permit to Work under which the work is being performed.

# 10.6 Accredited Electrolysis Interference Tester (ELLIPSE Resource Code: AES02)

In order to be eligible for certification or recertification as an Accredited Electrolysis Interference Tester, a person shall meet all the requirements in Table 7.

Table 7: Requirements for Accredited Electrolysis Interference Tester

Requirement Identifier	Requirement Description	Evidence required	Recertification period
Α	Completed The Australasian Corrosion Association Inc. Electrolysis Testers course.	Certificate issued by the Australasian Corrosion Association Inc.	None
В	Assessed in the knowledge requirement of the <u>Guide for</u> <u>Measurement of Interference Caused</u> <u>by Cathodic Protection and Railway</u> <u>Drainage Systems</u> .	Assessment by the Principal Engineer Power Systems ESI	2 Years
С	Appropriate knowledge of the ENSR. (See Note)	Examination Result	1 Year
D	Resuscitation.	Practical competency assessment	1 Year
E	Releasing a person from a live LV electrical apparatus.	Practical competency assessment	1 Year

#### **NOTE**

Successful completion of the "Introduction to Electrical Network Safety Rules (ENSR EJ22)" course run by TfNSW L&D satisfies the initial certification requirements, whereas successful completion of the written examination (EL50) satisfies the recertification requirement.

The person is to be initially certified and recertified annually (except Requirement Identifier B with a recertification period of 2 years), on the evidence listed.

An Accredited Electrolysis Interference Tester is permitted to perform, in accordance with the ENSR:

- a) work to the Safe Approach Distances (SADs) specified for "Accredited Persons" in *PR D 79049 Safe Approach Distances (SADs)*, in relation to DC nominal voltages only
- b) interference testing and installation associated with dc railway traction drainage systems
- c) testing and replacement of OHW structure to rail spark gaps units, excluding installations of spark gaps/Ferraz units and connections to rail.

# 10.7 Accredited Cable Jointer (ELLIPSE Resource Code: AES13)

In order to be eligible for certification or recertification as an Accredited Cable Jointer, a person shall meet all the requirements in Table 8.

**Table 8: Requirements for Accredited Cable Jointer** 

Requirement Identifier	Requirement Description	Evidence required	Recertification period
A	Certificate III in ESI – Power Systems –     Distribution Cable Jointing (National     Qualification No UET30819)     or	Certificate	None
	Certificate III in Electrotechnology Electrician (National Qualification No. UEE30820)		
	Certificate III in Electrical Fitting (National Qualification No. UEE33020)		
В	Appropriate knowledge of the ENSR.	Examination Result	1 Year
С	Resuscitation.	Practical competency assessment	1 Year
D	Releasing a person from live LV electrical apparatus.	Practical competency assessment	1 Year
E	Accredited in other relevant release and rescue techniques, where required by the person's duties, e.g. pole or structure, elevating work platform rescue, controlled descent device.	Practical competency assessment	1 Year
F	Assessed by the person's Supervisor as being able to perform the functions of an Accredited Cable Jointer satisfactorily.	Assessment Form	1 Year
	This Assessment shall be carried out by the person's Supervisor who shall either:		
	be a Workplace Assessor and hold a Certificate III in Electricity Supply Industry – Distribution Cable Jointing		
	or		
	obtain the services of another Workplace Assessor and Certificate III qualified Distribution Cable Jointer as described immediately above.		
	This Assessment shall be carried out in accordance with the organisation's competency management and assessment system that is developed and complies with the AMB Competency Management Standards.		

The person is to be initially certified, and re-certified annually, on the evidence listed.

The Authorised Cable Jointer certifying/recertification authority is the Associate Director Electrical Distribution Unit (delegated to the Electrical Authorising Officer). An Accredited Cable Jointer is permitted to perform, in accordance with the ENSR, all of the functions listed below:

- a) work to the Safe Approach Distances (SADs) specified for "Accredited Persons" in PR D 79049 Safe Approach Distances (SADs)
- b) work without supervision on high voltage cables (see Notes 2, 3 and 4)
- c) work without supervision on 1500 Volt cables (see Notes 2, 3, 4 and 5)
- d) work without supervision on low voltage cables (see Note 2).

#### NOTE 1

Only TfNSW Asset Management Branch (AMB) approved jointing/termination kits shall be used. Refer to TfNSW Approved HV terminations and joints.

#### NOTE 2

The person shall also have obtained a certificate issued by the manufacturer of the jointing/termination kit that has been approved for use by TfNSW AMB for the task concerned, refer to TfNSW Approved HV terminations and joints. The certification shall attest to the competence of the person concerned to install the kit.

#### NOTE 3

The person holding the Distribution Cable Jointing qualification is permitted to work on HV, DC and LV cables.

The person holding the Electrotechnology Electrician or Electrical Fitting qualification is permitted to work on DC and LV cables ONLY.

#### **NOTE 4**

An Accredited Cable Jointer may only work without supervision on jointing and terminating cables where specific documented training has been received for the specific jointing work being carried out.

#### NOTE 5

Cable Jointers previously employed by another Electrical Network Operator and who have no working experience on dc cables shall undertake an on the job assessment by another Accredited Cable Jointer prior to working without supervision.

# 10.8 Overhead Worker (ELLIPSE Resource Code: AES04)

In order to be eligible for certification or recertification as an Overhead Worker, a person shall meet all the requirements in Table 9.

Table 9: Requirements for Overhead Worker

Requirement Identifier	Requirement Description	Evidence required	Recertification period
A	Successful completion of: TfNSW L&D course EE76 Power Line Safety Practices or competency standard unit RIIWHS204D "Work safely at heights".	Certificate or Results Notice from a RTO as appropriate.	None
В	Appropriate knowledge of the ENSR.	Examination Result	1 Year
С	Resuscitation.	Practical competency assessment	1 Year
D	Releasing a person from live LV electrical apparatus.	Practical competency assessment	1 Year
E	Rescuing a person from a pole or structure.	Practical competency assessment	1 Year
F	Rescuing a person from an elevating work platform.	Practical competency assessment	1 Year
G	Use of Controlled Descent Device.	Practical competency assessment	1 Year
Н	Qualified or accredited to perform the specified duties at ground level.	Relevant qualification or certificate	-
I	Assessed by the person's Supervisor who shall also be an Overhead Worker or Authorised Officer (Mains/Substations) as being able to perform the specified functions of an Overhead Worker satisfactorily.	Assessment form	1 Year

The person is to be initially certified, and recertified annually, on the evidence listed.

An Overhead Worker is permitted to perform aloft, in accordance with the ENSR, specified functions which the person is otherwise certified/qualified to perform at ground level.

# 10.9 Authorised Overhead Traction Worker (ELLIPSE Resource Code: AES15)

To be eligible for certification or recertification as an Authorised Overhead Traction Worker, a person shall meet all the requirements in Table 10.

Table 10: Requirements for Authorised Overhead Traction Worker

Requirement Identifier	Requirement Description	Evidence required	Recertification period
A	Certificate III in ESI – Power Systems – Rail Traction (National Qualification No UET30719) and UETTDRDP12 "Maintain overhead energised LV conductors and cables"	Certificate	None
В	Appropriate knowledge of the ENSR.	Examination Result	1 Year
С	Resuscitation.	Practical competency assessment	1 Year
D	Releasing a person from live LV electrical apparatus.	Practical competency assessment	1 Year
E	Rescuing a person from a pole or structure.	Practical competency assessment	1 Year
F	Rescuing a person from an elevating work platform.	Practical competency assessment	1 Year
G	Use of Controlled Descent Device.	Practical competency assessment	1 Year
Н	Assessed by the person's Supervisor who shall also be an Authorised Overhead Traction Worker or an Authorised Officer (Mains) as being able to perform the functions of an Authorised Overhead Traction Worker satisfactorily.	Assessment form	1 Year

The person is to be initially certified and recertified annually on the evidence listed.

An Authorised Overhead Traction Worker is permitted to perform, in accordance with the ENSR, all of the functions listed below:

- a) work to the Safe Approach Distances (SADs) specified for "Authorised Persons" in PR D 79049 Safe Approach Distances (SADs).
- b) perform electrical work using electrically insulated tools and equipment near or on/within of LIVE 1500 Volt DC equipment
- c) work without supervision on earthed high voltage aerial lines
- d) work without supervision on rail-connected 1500 Volt overhead wiring
- e) work, including live work, without supervision on low voltage aerial lines
- f) perform installation and testing of OHW structure to rail bonding, excluding connection to rail.

# 10.10 Authorised Traction Operator (ELLIPSE Resource Code: AES16)

In order to be eligible for certification or recertification as an Authorised Traction Operator, a person shall:

- a) be an Authorised Overhead Traction Worker
- b) meet all of the requirements in Table 11.

**Table 11: Requirements for Authorised Traction Operator** 

Requirement Identifier	Requirement Description	Evidence required	Recertification period
A	Successful completion of TfNSW L&D course code EE88 Rail Traction Switching and EE88 Rail Traction Switching Final Assessment or UETTDRRT30 Perform to a given schedule rail traction switching operations.	Provide relevant documentatio n	None
В	Undertake behavioural competency assessment	Online Assessment Report	None
С	Appropriate knowledge of the ENSR.	Examination Result	1 Year
D	Resuscitation.	Practical competency assessment	1 Year
E	Releasing a person from live LV electrical apparatus.	Practical competency assessment	1 Year
F	Rescuing a person from a pole or structure.	Practical competency assessment	1 Year
G	Rescuing a person from an elevating work platform.	Practical competency assessment	1 Year
Н	Use of Controlled Descent Device.	Practical competency assessment	1 Year
I	Assessed by the Associate Director Electrical Distribution Unit in the operation of high voltage field switches and 1500 Volt switches.	Written notification from Associate Director Electrical Distribution Unit	1 Year
J	Assessed by the person's Supervisor who shall also be an Authorised Traction Operator or an Authorised Officer (Mains) as being able to perform the functions of an Authorised Traction Operator satisfactorily.	Assessment Form	1 Year

The person is to be initially certified, and re-certified annually, on the evidence listed.

An Authorised Traction Operator is permitted to perform, in accordance with the ENSR, all of the functions listed below:

- a) When performing isolation procedures or test and rail connect procedures approach the Safe Approach Distances (SADs) specified for "Authorised Persons" in *PR D* 79049 Safe Approach Distances (SADs) in relation to:
  - Low Voltage
  - High Voltage
  - DC nominal voltages up to and including 1500 Volts.
- b) carry out operating work on High Voltage Aerial Lines, 1500 Volt Overhead Wiring, and Low Voltage switches
- perform Safety Observer duties in accordance with PR D 78700 Section 5.4 Safety Observer
- d) operate electrical equipment using electrically insulated tools and equipment near or on/within of LIVE 1500 Volt DC equipment
- e) Perform electrical work using electrically insulated tools and equipment near or on/within of LIVE 1500 Volt DC equipment
- f) hold a Working High Voltage Instruction (WHVI) for aerial lines and associated cables
- g) issue, hold, retrieve and cancel Permits and Operating Agreements for work on high voltage aerial lines and associated cables outside substations
- h) hold a 1500 Volt "Authority"
- i) issue, hold, retrieve and cancel Permits and Operating Agreements for work on 1500 Volt overhead wiring and associated cables outside substations
- issue a "Notification for the Removal of 1500 Volt Supply in Electric Vehicle Maintenance Centres"
- k) issue, hold, retrieve and cancel Permits for work on low voltage aerial lines and low voltage cables, outside substations, that can be visually traced from a low voltage aerial line.

# 10.11 Authorised Officer (Mains) (ELLIPSE Resource Code: AES06)

In order to be eligible for certification or recertification as an Authorised Officer (Mains), a person shall:

- hold a Tertiary qualification in an Electrical Discipline as accepted by Associate Director Electrical Distribution Unit
- b) meet all the requirements in Table 12.

**Table 12: Requirements for Authorised Officer (Mains)** 

Requirement Identifier	Requirement Description	Evidence required	Recertification period
Α	Appropriate knowledge of the ENSR.	Examination Result	1 Year
В	Undertake behavioural competency assessment	Online Assessment Report	None
С	Resuscitation.	Practical competency assessment	1 Year
D	Releasing a person from a live LV electrical apparatus where required by the person's duties (e.g. Issue LV Permits).	Practical competency assessment	1 Year
E	Assessed in other relevant release and rescue techniques, where required by the person's duties (e.g. Pole top rescue).	Practical competency assessment	1 Year
F	Assessed in each specified function by an Electrical Authorising Officer. (Functions selected from those listed below.)	Verbal examination & practical competency assessment	1 Year
G	Assessed by the Associate Director Electrical Distribution Unit, or delegate, in the operation of high voltage field switches, 1500 Volt switches and low voltage switches where these functions are selected.	Written notification from Associate Director Electrical Distribution Unit	1 Year
Н	Assessment by the relevant TSS Level 1 Manager or above Line Manager immediately responsible for the person/work activity to verify: the business need for nominated function(s), and the person's competence for holding the certification.	Assessment Form	1 Year
I	Assessed by the Manager Electrical Distribution Unit to approve an "Advice of Alteration to Electrical System Operating Diagrams", if required.	Written notification by Associate Director Electrical Distribution Unit	1 Year

The person is to be initially certified, and re-certified annually, on the evidence listed.

An Authorised Officer (Mains) is permitted to perform, in accordance with the ENSR and competency assurance, specified functions from the list below:

- a) approve a Working High Voltage Instruction (WHVI)
- b) hold a WHVI
- c) hold a WHVI for a "Test Electrical Permit to Work" (electrical engineers or Authorised Officer (Substations) only)
- d) approve an "Advice of Alteration to Electrical System Operating Diagrams"
- e) approve a 1500 Volt "Authority"
- f) hold a 1500 Volt "Authority"
- g) hold a 1500 Volt "Authority" for a "Test Electrical Permit to Work" (electrical engineers or Authorised Officer (Substations) only)
- h) issue a "Notification for the Removal of 1500 Volt Supply in Electric Vehicle Maintenance Centres"
- if permitted to undertake any of the specified work functions a) to h), work to the SADs specified for "Accredited Persons" in PR D 79049 Safe Approach Distances (SADs)
- j) carry out operating work on High Voltage Aerial Lines, 1500 Volt Overhead Wiring, and Low Voltage switches
- k) issue, hold, retrieve and cancel Permits for work on Low Voltage aerial lines and Low Voltage cables outside substations that can be visually traced from a Low Voltage aerial line
- l) issue, hold, retrieve and cancel Permits and Operating Agreements for work on 1500 Volt overhead wiring and cables outside substations
- m) issue, hold, retrieve and cancel Permits and Operating Agreements for work on High Voltage aerial lines and cables outside substations
- n) perform electrical work using electrically insulated tools and equipment near or on/within of LIVE 1500 Volt DC equipment
- o) if permitted to undertake any of the specified work functions j) to n), work to the SADs specified for "Authorised Persons" in PR D 79049 Safe Approach Distances (SADs).

# 10.12 Authorised Attendant (ELLIPSE Resource Code: AES05)

In order to be eligible for certification or recertification as an Authorised Attendant, a person shall meet all the requirements in Table 13.

**Table 13: Requirements for Authorised Attendant** 

Requirement Identifier	Requirement Description	Evidence required	Recertification period
A	Hold a qualification relevant to the work functions to be performed (the Associate Director Electrical Distribution Unit will accept or reject such qualification).	Provide relevant documentatio n	None
В	Appropriate knowledge of the ENSR. (refer to Note)	Examination Result	1 Year
С	Resuscitation.	Practical competency assessment	1 Year
D	Releasing a person from live LV electrical apparatus.	Practical competency assessment	1 Year
E	Assessed in other relevant release and rescue techniques, where required by the person's duties.	Practical competency assessment	1 Year
F	Assessed by the Technically Assured Organisation (TAO) Line Manager immediately responsible for the person/work activity to verify:  1. the business need for nominated function(s), and the person's competence for holding the certification.	Assessment form	1 Year
G	Assessed by the Manager Electrical Distribution Unit for each selected specified function.	Written notification from Associate Director Electrical Distribution Unit	1 Year

#### **NOTE**

Specific examination requirements depend on the particular specified functions for which the person is Authorised.

An Authorised Attendant is permitted to enter one or more nominated substations or classes of substations and perform, in accordance with the ENSR, specified functions. Such specified functions are to be selected from those functions undertaken by an Authorised Operator.

# 10.13 Authorised Operator (ELLIPSE Resource Code: AES08)

In order to be eligible for certification or recertification as an Authorised Operator, a person shall:

- hold a Tertiary qualification in an Electrical Discipline as accepted by Associate Director Electrical Distribution Unit
- b) meet all the requirements in Table 14.

**Table 14: Requirements of Authorised Operator** 

Requirement Identifier	Requirement Description	Evidence required	Recertification period
A	Competency UETTDRIS43 Perform LV field switching operation to a given schedule or successful completion of TfNSW L&D course codes EL11 Low Voltage Switching and EL37 LV Switching Final Assessment and UETTDRSB39 Perform power system substation switching operation to a given schedule or successful completion of TfNSW L&D course codes EL30 Substation Switching and EL36 Substation Switching Final Assessment.	Provide relevant documentation	None
В	Appropriate knowledge of the ENSR.	Examination Result	1 Year
С	Undertake behavioural competency assessment	Online Assessment Report	None
D	Resuscitation.	Practical competency assessment	1 Year
E	Releasing a person from live LV electrical apparatus.	Practical competency assessment	1 Year
F	Assessed in other relevant release and rescue techniques, where required by the person's duties (e.g. pole or structure, elevating work platform rescue, controlled descent device).	Practical competency assessment	1 Year
G	Assessed by the person's Supervisor as being capable to perform the functions of an Authorised Operator satisfactory.  The supervisor shall either be, or gain the services of, an Authorised Operator/ Officer as being able to perform the functions of an Authorised Operator satisfactorily.	Assessment form	1 Year
Н	Assessed by the Associate Director Electrical Distribution Unit in the operation of high voltage, 1500 Volt and low voltage equipment.	Written notification from Associate Director Electrical Distribution Unit	1 Year

The person is to be initially certified, and recertified annually, on the evidence listed.

An Authorised Operator is permitted to perform, in accordance with the ENSR, the specified functions listed below:

- a) work to the SADs specified for "Authorised Persons" in PR D 79049 Safe Approach Distances (SADs)
- b) perform Safety Observer duties in accordance with PR D 78700 Section 5.4 Safety Observer
- c) enter substations
- d) carry out operating work on all high voltage, 1500 Volt and low voltage equipment (see Note 1)
- e) operate electrical equipment using electrically insulated tools and equipment near or on/within of LIVE 1500 Volt DC equipment
- f) issue, hold and cancel a "Substation Access Permit" (see Note 1)
- g) issue and cancel a "Test Substation Access Permit" (see Note 1)
- h) carry out "electrical work" on "electrical equipment" (see Note 1)
- i) supervise work within substations (see Note 2)
- if specifically authorised by the Associate Director Electrical Distribution Unit, undertake work on operational protection systems associated with the HV AC network
- k) perform a termination or joint on a 1500 Volt polymeric cable if the person:
  - is covered by the Sydney Trains "Substation/Low Voltage Electrical"
     Classification Structure and is at or above Level 3.2 of that Classification
     Structure, or possesses a Certificate III Electrotechnology Electrician
     qualification
  - has obtained a certificate issued by the manufacturer of the jointing/terminating kit that has been approved for use by TfNSW AMB for the task concerned. The certificate shall attest to the competence of the person to install the kit.

#### NOTE 1

The Worker may be authorised for this work function to "limited" specific work locations, items of equipment and/or voltage levels.

#### NOTE 2

Accompany and take responsibility for unauthorised persons admitted into substations.

Oversee non-electrical work and give directions as necessary to ensure that the work is carried out safely and in accordance with the ENSR.

Oversee electrical work and give directions as necessary to ensure that the work is carried out safely and in accordance with the ENSR. To supervise electrical works, you are to hold the relevant national unit or equivalent internal course codes to supervise those works:

- UETTDRSB23 Install and maintain substation DC systems or EL21 and EL66
- UETTDRSB22 Carry out power systems substation inspection or EL35 and EL69
- UETTDRSB25 Maintain HV power and instrument transformers or EL32 and EL68
- UETTDRSB24 Maintain high voltage power system circuit breakers or EL31 and EL67

- UETTDRSB26 Install high current DC equipment and switchgear or EL38, EL39, EL40 and EL41
- UETTDRSB27 Maintain high current DC equipment and switchgear or EL38, EL39, EL40 and EL41
- UETTDRSB21 Diagnose and rectify faults in substation environmental EL45 and EL70.

Ensure that work does not compromise the integrity of the electrical system, and that electrical equipment that is not fit for service is not placed in service or returned to service.

Does not preclude an Authorised Operator from also undertaking work that the person is qualified to do.

# 10.14 Authorised Officer (Substations) (ELLIPSE Resource Code: AES07)

In order to be eligible for certification or recertification as an Authorised Officer (Substations), a person shall meet all the requirements in Table 15.

**Table 15: Requirements for Authorised Officer (Substations)** 

Requirement Identifier	Requirement Description	Evidence required	Recertification period
A	<ul> <li>Be an Authorised Operator and</li> <li>Hold the qualification: Certificate IV in ESI – Power Systems Substations (National Qualification No. UET40519)</li> <li>Hold a Tertiary Qualification in Electrical Engineering and</li> <li>Hold a qualification relevant to the work functions to be performed (the Associate Director Electrical Distribution Unit will accept or reject such qualification)</li> <li>Hold the following units of competency from an RTO:         <ul> <li>as per Authorised Operator, Requirement Identifier "A"</li> <li>UETTDRSB23 Install and maintain substation DC systems</li> <li>UETTDRSB26 Install high current DC equipment and switchgear</li> <li>UETTDRSB27 Maintain high current DC equipment and switchgear</li> <li>UETTDRSB21Diagnose and rectify faults in substation environment.</li> </ul> </li> </ul>	Certificate or Results Notice from a RTO as appropriate and/or verification of membership to Engineers Australia.	None
В	Undertake behavioural competency assessment.	Online Assessment Report	None
С	Appropriate knowledge of the ENSR.	Examination Result	1 Year
D	Resuscitation.	Practical competency assessment	1 Year
E	Releasing a person from live LV electrical apparatus.	Practical competency assessment	1 Year

Requirement Identifier	Requirement Description	Evidence required	Recertification period
F	Assessed in other relevant release and rescue techniques, where required by the person's duties (e.g. pole top rescue).	Practical competency assessment	1 Year
G	Assessment by the relevant TSS Level 1 Manager or above Line Manager immediately responsible for the person/work activity to verify the business need for nominated function(s). The person's competence for holding the certification.	Assessment Form	1 Year
Н	Assessed by the Associate Director Electrical Distribution Unit in the operation of high voltage, 1500 Volt and low voltage equipment.	Written notification from Associate Director Electrical Distribution Unit	1 Year
I	Assessed by the Associate Director Electrical Distribution Unit as being able to perform the functions of an Authorised Officer (Substations) satisfactorily.	Written notification from Associate Director Electrical Distribution Unit	1 Year
J	Assessed by the Associate Director Electrical Distribution Unit to approve an "Advice of Alteration to Electrical System Operating Diagrams", if required.	Written notification by Associate Director Electrical Distribution Unit	1 Year

The person is to be initially certified, and re-certified annually, on the evidence listed.

An Authorised Officer (Substations) is permitted to perform specific functions listed below, in accordance with the ENSR:

- a) perform specified functions listed for an Authorised Operator (refer to Section 5.13)
- b) check, instruct, issue, hold and cancel an "Extraordinary Substation Access Permit"
- c) if specifically authorised by the Associate Director Electrical Distribution Unit:
  - test and verify correct operation of protection systems associated with the HV ac network
  - approve an "Advice of Alteration to Electrical System Operating Diagrams".

# 10.15 Electrical Authorising Officer (ELLIPSE Resource Code: AES14)

An Electrical Authorising Officer is nominated by the relevant line manager to authorise mains and or substation staff within a defined area of responsibility. That person shall meet all the requirements in Table 16.

**Table 16: Requirements for Electrical Authorising Officer** 

Requirement Identifier	Requirement Description	Evidence required	Recertification period
A	Have extensive experience as an: Authorised Officer (Mains) or Authorised Officer (Substations) and be certified by the Associate Director Electrical Distribution Unit as being capable of performing specified functions of an: Authorised Officer (Mains) or Authorised Officer (Substations).	Work history	None
В	Undertake behavioural competency assessment.	Online Assessment Report	None
С	Prepare and present for discussion with the Associate Director Electrical Distribution Unit practical scenarios for the area concerned, for each function listed for an Authorised Officer (Mains and/or Substations), which, if satisfactory, is approved to be used to examine prospective Authorised Officers (Mains and/or Substations).	Written and verbal assessment	3 Years (See Note)

#### **NOTE**

A candidate for becoming an Electrical Authorising Officer shall satisfy the criteria of the Requirement Description. The Associate Director Electrical Distribution Unit may waive such criteria and substitute a verbal or another form of assessment for recertification of an existing certified Electrical Authorising Officer.

The person is to be initially certified, and recertified every 3 years, on the evidence listed.

An Electrical Authorising Officer is authorised to examine and certify persons as Authorised Officers (Mains and/or Substations), and other Certifications for Electrical personnel as required.

# 10.16 Authorised Person (Low Voltage) (ELLIPSE Resource Code: AES19)

In order to be eligible for certification or recertification as an Authorised Person (Low Voltage), a person shall:

- a) hold a Qualified Supervisor Certificate (Electrical Work) or a Contractor Licence (Electrical Q) issued by NSW Fair Trading
- b) meet all the requirements in Table 17.

Table 17: Requirements for Authorised Person (Low Voltage)

Requirement Identifier	Requirement Description	Evidence required	Recertification period
A	UETTDRIS43 Perform LV field switching operation to a given schedule or successful completion of TfNSW L&D course codes EL11 Low Voltage Switching and EL37 LV Switching Final Assessment.	Provide relevant documentatio n	None
В	Appropriate knowledge of the ENSR.	Examination Result	1 Year
С	Resuscitation.	Practical competency assessment	1 Year
D	Releasing a person from live LV electrical apparatus.	Practical competency assessment	1 Year
E	Assessed by the person's Supervisor who shall also be: an Authorised Person (Low Voltage) or an Authorised Operator who is also a Qualified Electrician as being able to perform the functions of an Authorised Person (Low Voltage) satisfactorily.	Assessment Form	1 Year

The person is to be initially certified, and recertified annually, on the evidence listed.

An Authorised Person (Low Voltage) is permitted to perform, in accordance with the ENSR, the functions listed below:

- a) Persons who hold either a Qualified Supervisor's License or Qualified Electrical Contractor's Licence may work to the "Authorised Persons" in PR D 79049 Safe Approach Distances (SADs) in relation to AC Low Voltage only.
- operate Low Voltage switches on the Low Voltage Distribution Network or Low Voltage Installations
- c) issue, hold, retrieve and cancel Low Voltage Access Permits
- d) supervise or carry out electrical work on the Low Voltage Distribution Network or Low Voltage Installations

- e) carry out electrical work on Low Voltage Installations, including live electrical work, in accordance with D2013/80873 Work on Low Voltage Installations
- f) perform a termination or joint on a 1500 Volt polymeric cable if the person has obtained a certificate issued by the manufacturer of the jointing/terminating kit that has been approved for use by TfNSW AMB for the task concerned. The certificate shall attest to the competence of the person to install the kit.

#### **NOTE**

All electrical work shall be subjected to commissioning inspections and tests in accordance with:

- AS/NZS 3000 Electrical Installations (known as the Wiring Rules)
- Service and Installation Rules of New South Wales
- relevant standards
- T HR EL 17001 ST Electrical Distribution System Installation Connection and Inspection

#### and/or

• THR SS 80002 ST Low Voltage Electrical Installations.

### 10.17 Electrical System Operator (ELLIPSE Resource Code: AES22)

In order to be eligible for certification or recertification as an Electrical System Operator, a person shall:

- a) have been an Authorised Operator, and
- b) meet all the requirements in Table 18.

Table 18: Requirements for Electrical System Operator

Requirement Identifier	Requirement Description	Evidence required	Recertification period
Α	Hold an electrical qualification relevant to the work functions to be performed (the Associate Director Electrical Distribution Unit will accept or reject such qualification).	Provide relevant documentatio n	None
В	Undertake behavioural competency assessment.	Online Assessment Report	None
С	Complete Sydney Trains Electrical System Operator training course.	Provide relevant documentatio n	None
D	Appropriate knowledge of the ENSR.	Examination Result	1 Year
E	Assessed by the TAO Line Manager immediately responsible for the person/work activity to verify:  2. the business need for nominated function(s) the person's competence for holding the certification.	Assessment Form	1 Year
F	Assessed by Associate Director Electrical Distribution Unit (or delegated authority) to approve an "Advice of Alteration to Electrical System Operating Diagrams", if required.	Written notification from Associate Director Electrical Distribution Unit	1 Year

The person is to be initially certified, and recertified annually, on the evidence listed.

An Electrical System Operator is permitted to perform, in accordance with the ENSR, specified functions listed below:

- a) enter Substations/Sectioning Huts
- b) write/issue and check a Working High Voltage Instruction (WHVI)
- c) write/issue and check a 1500 Volt "Authority"
- d) remote operations of TAHE's Electrical Network
- e) hold a "verbal" Operating Agreement between participating Distribution Network Service Provider (DNSP) Electrical Network control centres
- f) regulate TAHE's Electrical Network supply

- g) parallel other DNSPs Electrical Networks through the TAHE Electrical Network
- h) suspend Electrical Certifications following an electrical safety incident
- i) approve an "Advice of Alteration to Electrical System Operating Diagrams".

# 10.18 Accredited Safety Assistant for Switching Operations (ELLIPSE Resource Code: AES23)

In order to be eligible for certification or recertification as an accredited Safety Assistant for Switching Operations, a person shall meet all the requirements in Table 19.

Table 19: Requirements for Accredited Safety Assistant for Switching Operations

Requirement Identifier	Requirement Description	Evidence required	Recertification period
A	Successfully completed the: TfNSW L&D course (EAW01E) Electrical Safety Awareness eLearning or TfNSW L&D course (EJ22) Introduction to Electrical Network Safety Rules.	Examination Result	None
В	Successfully completed the TfNSW L&D course ( <b>SM06</b> ) Hazardous Manual Tasks.	Examination Result	Assessment by Manager
С	Successfully completed the TfNSW L&D course (SM31) Fatigue Management course.	Examination Result	None
D	First Aid Certificate.	Practical competency assessment	3 Years
E	Cardio Pulmonary Resuscitation.	Practical competency assessment	1 Year
F	Successfully completed the TfNSW L&D course (ESA01) Safety Assistant for Switching Operations training (See Note).	Examination Result	1 year

#### **NOTE**

Successful completion of the "Safety Assistant for Switching Operations (ESA01)" course run by TfNSW L&D satisfies the initial certification requirements, whereas the successful completion of the recertification examination of Safety Assistant for Switching Operations satisfies the recertification requirement.

An accredited Safety Assistant for Switching Operations certificate holder is authorised to:

- a) perform the function of Safety Assistant to the SADs specified for "Accredited Persons" per PR D 79049 Safe Approach Distances (SADs).
- b) accompany an Authorised Person while the Authorised Person undertakes duties associated with switching operations.

### 10.19 Accredited Electrical Permit Holder (ELLIPSE Resource Code: MEI61)

In order to be eligible for certification or recertification as an Accredited Electrical Permit Holder, a person shall meet all the requirements in Table 20.

Table 20: Requirements for Accredited Electrical Permit Holder

Requirement Identifier	Requirement Description	Evidence required	Recertification period
A	Successfully completed and maintained the Rail Safety Worker certification.	Examination Result	None
В	Successfully completed the Electrical Permit Holder Course.	Examination Result	None
С	Successfully completed the Electrical Permit Holder Course recertification exam.	Examination Result	2 Years

The person is to be initially certified, and recertified biannually, on the evidence listed.

The Accredited Electrical Permit Holder certifying authority is the Associate Director Electrical Distribution Unit (**delegated to TfNSW L&D**).

A certificate issued by TfNSW L&D for both the initial Accredited Electrical Permit Holding (AEPH) course and the bi-annual refresher AEPH course is regarded as sufficient evidence for the initial certification and recertification respectively.

A person who is authorised to issue an Electrical Permit is deemed to be an Accredited Electrical Permit Holder. No additional certification is required.

An Accredited Electrical Permit Holder is authorised to:

- a) work to the SADs specified for "Accredited Persons" in *PR D 79049 Safe Approach Distances (SADs).*
- b) hold an Electrical Permit to Work
- c) hold a Substation Access Permit issued for work on 1500 Volt negative equipment outside a substation.

### 10.20 Accredited for Entry (ELLIPSE Resource Code: AES03)

In order to be eligible for certification or recertification as Accredited for Entry, a person shall meet all the requirements in Table 21.

Table 21: Requirements for Accredited for Entry

Requirement Identifier	Requirement Description	Evidence required	Recertification period
A	Assessed by the TAO Line Manager immediately responsible for the person/work activity to verify: the business need for nominated function(s) and the person's competence for holding the Accredited for Entry certification.	Written notification from the TAO Line Manager immediately responsible for the person/work activity (TSS Manager or above)	1 Year
В	For initial certification, the candidate shall complete PR D 78701 FM04 Application for Certification/Recertification in Accredited for Entry (AES03) Item 3 Training.	Completion of PR D 78701 FM04 Item 3 Training	None
С	Appropriate knowledge of the ENSR. (see Note 1)	Examination Result	1 Year
D	Assessed by the Associate Director Electrical Distribution Unit, or delegate, as being able to safely enter a substation in order to carry out those functions selected from those listed below.	Written notification from the Associate Director Electrical Distribution Unit	5 Year

#### NOTE 1

Successful completion of the "Introduction to Electrical Network Safety Rules (ENSR EJ22) course run by TfNSW L&D satisfies the initial certification requirements, whereas successful completion of the written examination "General Electrical Safety" written examination satisfies the recertification requirement.

The person is to be initially certified, and recertified annually, on the evidence listed.

An Accredited for Entry certificate holder is permitted to:

- a) work to the SADs specified for "Accredited Persons" in *PR D* 79049 Safe Approach Distances (SADs).
- enter substations to perform the following specified functions without the use of tools:
  - i. deliver/replace Operating Diagrams or substation consumables, including restocking of first aid kits
  - ii. conduct **visual** inspections and review associated documentation for items such as first aid kits, ladders, Operating Diagrams, etc.

- iii. use substation facilities, i.e. phone, toilet, shower, hand basin
- iv. check next inspection date for earth sets, operating sticks and test equipment not currently in use
- v. access fire extinguishers for periodical checks
- vi. access fire control panels for routine periodical checks (see Note 2).

#### NOTE 2

If the periodical checks require access beyond the confines of the fire control panel, direct/constant supervision shall be provided by an Authorised Person (Substations).

#### NOTE 3

An Accredited for Entry certificate holder cannot:

- supervise other persons in a substation
- accompany other persons in a substation unless the other person either holds an Accredited for Entry certification or is an Authorised Person (Substations).

# 10.21 Accredited Substation Permit Holder (ELLIPSE Resource Code: AES24)

In order to be eligible for certification or recertification as an Accredited Substation Permit Holder, a person shall meet all the requirements in Table 22.

#### **Prerequisites**

The Line Manager for the PCBU must provide a signed letter on company letterhead requesting the following in support of a request for certification:

- 1. Project or Program Name
- 2. Delivery Organisation sponsoring the project or program
- 3. Start and Finish Date of Project or Program and the duration for which certification is required
- 4. Locations for which a Permit Holder is required
- 5. Name of employees to be authorised
- 6. Certified copies of the employee's RIW Cards
- 7. Information satisfying requirement identifier A and B in the table below
- 8. Resume showing that the employees proposed to be accredited have relevant prior work experience in substations (refer to GL D 79104 Assessment Guide for AES24 Accredited Substation Permit Holder for further assistance).

The letter and supporting information shall be submitted to EDU for review and acceptance prior to the resources proceeding with satisfying the remainder of the table below.

The letter and supporting information shall be sent to Electrical Assessments@transport.nsw.gov.au

Table 22: Requirements for Accredited Substation Permit Holder

Requirement Identifier	Requirement Description	Evidence required	Recertification period
A	Successfully completed TfNSW L&D course (EJ22) Introduction to Electrical Network Safety Rules.	Certificate	None
В	Holds the following electrical qualifications:  Certificate III in Electrotechnology Electrician (National Qualification No. UEE30820) or higher. Qualifications may include degrees in Electrical Engineering Diplomas and Advanced Diplomas recognised by EDU.	Certificate & Academic Transcript	None
С	Successfully completed the Accredited Substation Permit Holder Initial Training Course (ESP01).	Examination Result	1 Year
D	UETTDRRF10 – Provide first aid in an ESI environment and	Practical competency assessment	1 Year

Requirement Identifier	Requirement Description	Evidence required	Recertification period
	HLTAID009 – Provide cardiopulmonary resuscitation.		
E	UETTDRRF06 – Perform rescue from a live LV panel.	Practical competency assessment	1 Year

The person is to be initially certified, and recertified annually, on the evidence listed.

A certificate issued by TfNSW L&D for both the Accredited Substation Permit Holder Initial Training Course (ESP01) and the annual refresher (ESP01R) course is regarded as sufficient evidence for the initial certification and recertification respectively.

An Accredited Substation Permit Holder is permitted to undertake Substation Permit holding at one or more nominated substations or classes of substations.

An Accredited Substation Permit Holder is authorised to:

- a) work to the SADs specified for "Accredited Persons" in *PR D* 79049 Safe Approach Distances (SADs).
- b) receive and hold only one Substation Access Permit at a time
- c) instruct the persons signing onto the Substation Access Permit
- d) transfer the Substation Access Permit to another Accredited Substation Permit Holder for continuous shifts and surrender the Substation Access Permit to an Authorised Persons (Substations) in accordance with PR D 78502 Substation Access Permit.

An Accredited Substation Permit Holder:

- Must not alter the limits of the safe work area, barriers, demarcation or other safety controls.
- Must not hold Substation Access Test Permits.
- Must not hold an Extraordinary Substation Access Permit.
- Must not cancel, modify or reissue a Substation Access Permit.
- Must not perform any other work whilst holding the Substation Access Permit.

#### **Maintaining Competency**

Where the Accredited Substation Permit Holder has performed this duty at least six times spread throughout the year, there may be no requirement for additional refresher training (annual refresher SPH course). Line Managers must confirm in writing with supporting evidence (e.g. line manager approved logbook showing copies of completed substation access permits) that the accredited person has maintained competence for these functions.

## 10.22 Accredited Electrical Tree Trimmer (Climber) (ELLIPSE Resource Code: MEI57)

In order to be eligible for certification or recertification as an Accredited Electrical Tree Trimmer (Climber), a person shall meet all the requirements in Table 23.

Table 23: Requirements for Accredited Electrical Tree Trimmer

Requirement Identifier	Requirement Description	Evidence required	Recertification period
A	Competency UET20321 Certificate II in ESI – Powerline Vegetation Control or equivalent and  • AHCARB322 - Access trees for inspection  • UETDRVC006 - Control vegetation in the vicinity of live electrical apparatus from within the tree  • UETDRVC007 - Control vegetation using pruning techniques	Provide relevant documentatio n	None
В	Appropriate knowledge of the ENSR. (see note 1)	Examination Result	1 Year
С	Resuscitation.	Practical competency assessment	1 Year
D	UETDRVC010 - Perform rescue from within a tree in the vicinity of live electrical	Practical competency assessment	1 Year
E	Assessment of the person's ability to perform the functions of an Accredited Tree Trimmer(Climber).  This Assessment shall be carried out by the person's Supervisor who shall either:  be a Workplace Assessor and hold a Certificate II UET20321 Certificate II in ESI – Powerline Vegetation Control (National Qualification No UET20321 or equivalent)  This Assessment shall be carried out in accordance with the organisation's competency management and assessment system that is developed and complies with the AMB Competency Management Standards.	Assessment	1 Year

#### NOTE 1

Successful completion of the "Introduction to Electrical Network Safety Rules (ENSR EJ22)" course run by TfNSW Learning & Development (L&D) satisfies the initial certification requirements, whereas successful completion of the written examination (EL50) satisfies the recertification requirement.

The person is to be initially certified, and recertified annually, on the evidence listed.

The Accredited Electrical Tree Trimmer certifying authority is the Associate Director Electrical Distribution Unit.

An Accredited Tree Trimmer (Climber) is permitted:

- a) to work to the Safe Approach Distances (SADs) specified for "Accredited Persons" in PR D 79049 Safe Approach Distances (SADs)
- b) Perform tree trimming (climber) activities in accordance with the documented safework method statement of the contractor.

A documented Safe Work Method Statement shall be produced and utilised for all activities carried out by the Accredited Tree Trimmer that involve work in the vicinity of Sydney Trains maintained electrical equipment.

## 10.23 Accredited Electrical Tree Trimmer (EWP) (ELLIPSE Resource Code: MEI58)

In order to be eligible for certification or recertification as an Accredited Electrical Tree Trimmer (EWP), a person shall meet all the requirements in Table 23.

Table 24: Requirements for Accredited Electrical Tree Trimmer

Requirement Identifier	Requirement Description	Evidence required	Recertificatio n period
A	Competency UET20321 Certificate II in ESI – Powerline Vegetation Control or equivalent	Provide relevant documentation	None
В	High Risk Work Licence for Boom-type elevating work platform (WP)	Provide relevant documentation	As Per SafeWork
С	UETDREL005 or UETDREL006 Work safely in the vicinity of live electrical apparatus worker.	Provide relevant documentation	1 Year
D	Appropriate knowledge of the ENSR. (see note 1)	Examination Result	1 Year
E	Resuscitation.	Practical competency assessment	1 Year
F	UETDRMP004 - Perform elevated work platform controlled descent escape UETDRMP005 - Perform elevated work platform rescue	Practical competency assessment	1 Year
G	Assessment of the person's ability to perform the functions of an Accredited Tre Trimmer.  This Assessment shall be carried out by the person's Supervisor who shall either:  be a Workplace Assessor and hold a Certificate II UET20321 Certificate II in ESI – Powerline Vegetation Control (National Qualification No UET20321 or equivalent)  This Assessment shall be carried out in accordance with the organisation's competency management and assessment system that is developed and complies with the AMB Competency Management Standards.	Assessment	1 Year

#### NOTE 1

Successful completion of the "Introduction to Electrical Network Safety Rules (ENSR EJ22)" course run by TfNSW Learning & Development (L&D) satisfies the initial certification requirements, whereas successful completion of the written examination (EL50) satisfies the recertification requirement.

The person is to be initially certified, and recertified annually, on the evidence listed.

The Accredited Electrical Permit Holder certifying authority is the Associate Director Electrical Distribution Unit.

An Accredited Tree Trimmer (EWP) is permitted:

- to work to the Safe Approach Distances (SADs) specified for "Accredited Persons" in PR D 79049 Safe Approach Distances (SADs)
- b) Perform tree trimming (EWP) activities in accordance with the documented safework method statement of the contractor.

A documented Safe Work Method Statement shall be produced and utilised for all activities carried out by the Accredited Tree Trimmer that involve work in the vicinity of Sydney Trains maintained electrical equipment.

# 10.24 Accredited Electrical Tree Trimmer (Ground) (ELLIPSE Resource Code: MEI59)

In order to be eligible for certification or recertification as an Accredited Electrical Tree Trimmer, a person shall meet all the requirements in Table 23.

**Table 25: Requirements for Accredited Electrical Tree Trimmer** 

Requirement Identifier	Requirement Description	Evidence required	Recertification period
Α	Competency UET20321 Certificate II in ESI – Powerline Vegetation Control or equivalent	Provide relevant documentatio n	None
В	Successfully completed and maintained the Rail Safety Worker certification.	Examination Result	None
С	UETDREL005 or UETDREL006 Work safely in the vicinity of live electrical apparatus worker.	Provide relevant documentatio n	1 Year
D	Appropriate knowledge of the ENSR. (see note 1)	Examination Result	1 Year
E	Resuscitation.	Practical competency assessment	1 Year
F	Assessed in relevant release and rescue techniques, where required by the person's duties (e.g. elevating work platform rescue, controlled descent device, rescue from within tree).	Practical competency assessment	1 Year
G	Assessment of the person's ability to perform the functions of an Accredited Tre Trimmer.  This Assessment shall be carried out by the person's Supervisor who shall either:  be a Workplace Assessor and hold a Certificate II UET20321 Certificate II in ESI – Powerline Vegetation Control (National Qualification No UET20321 or equivalent)  This Assessment shall be carried out in accordance with the organisation's competency management and assessment system that is developed and complies with the AMB Competency Management Standards.	Assessment	1 Year

#### **NOTE 1**

Successful completion of the "Introduction to Electrical Network Safety Rules (ENSR EJ22)" course run by TfNSW Learning & Development (L&D) satisfies the initial certification requirements, whereas successful completion of the written examination (EL50) satisfies the recertification requirement.

The person is to be initially certified, and recertified annually, on the evidence listed.

The Accredited Electrical Permit Holder certifying authority is the Associate Director Electrical Distribution Unit.

An Accredited Tree Trimmer (Ground) is permitted:

- to work to the Safe Approach Distances (SADs) specified for "Accredited Persons" in PR D 79049 Safe Approach Distances (SADs)
- b) Perform tree trimming (ground) activities in accordance with the documented safework method statement of the contractor.

A documented Safe Work Method Statement shall be produced and utilised for all activities carried out by the Accredited Tree Trimmer that involve work in the vicinity of Sydney Trains maintained electrical equipment.

### 11 Reference documents

Australian Skills Quality Authority (ASQA)

AS/NZS 3000:2018 Electrical Installations (known as the Australian/New Zealand Wiring Rules)

Electricity Supply Act 1995

ENA DOC 001-2019 National Electricity Network Safety Code

GL D 79104 Assessment Guide for AES24 Accredited Substation Permit Holder

Health Assessment Categories for Rail Safety Workers

National Register on Vocational Education and Training (VET);

UET Transmission, Distribution and Rail Sector

**UEE** Electrotechnology Training Package

PR D 78201 Removal and Restoration of High Voltage Supply

PR D 78202 Working High Voltage Instruction

PR D 78301 Removal and Restoration of 1500 Volt Supply

PR D 78301 FM01 Notification for the Removal of 1500V Supply in EVMCs

PR D 78302 1500 Volt Authority

PR D 78401 Isolation and Energisation of Low Voltage Equipment

PR D 78402 Work on Low Voltage Distribution System

PR D 78403 Work on Live Low Voltage Equipment

PR D 78500 Electrical Permits

PR D 78501 Electrical Permit to Work

PR D 78502 Substation Access Permit

SP D 79049 Safe Approach Distances

PR D 78704 Electrical Log Book Procedure

RL D 79800 Electrical Network Safety Rules

GUI31 SMS Rail Safety Worker Authorisation and Identification

Rail Safety National Law (NSW)

SafeWork NSW White Card (General Construction Industry Card) and High Risk Work Licences

Service and Installation Rules of New South Wales

PRO14 SMS Training and Competence

#### Supervising your apprentice or trainee NSW Dept Of Education

D2022/9618 Electrical Inspection and Testing of Low Voltage Installations

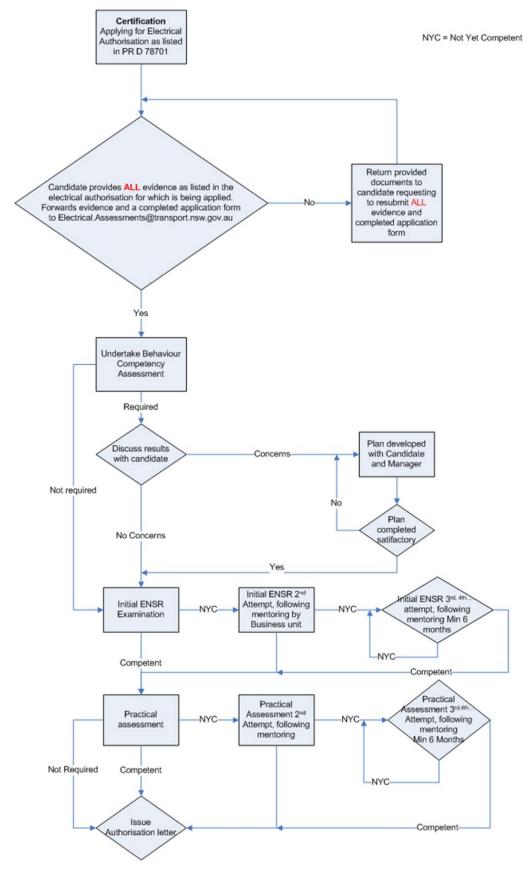
D2013/80873 Work on Low Voltage Installations

T MU AM 06016 GU Guide to Verification and Validation

T MU MD 20001 ST System Safety Standard for New or Altered Assets

Work Health and Safety Act 2011 (NSW)

### **Appendix A Certification Process**



### **Appendix B Post Incident Recertification Process**

