

Engineering System Integrity
Engineering Instruction
Electrical Distribution Unit

EI D 24-05

Apprentices Working Aloft on Electrical Network Infrastructure

This Engineering Instruction includes urgent engineering information. Adherence to the information in this Instruction is **MANDATORY**.

Date in Force: 18 July 2024

Date of Review: 18 July 2025

Approved by:

Sean Budge
A/Associate Director
Electrical Distribution Unit

Authorised by:

Jonathon McKinnon
Engineering Technical
Publications Manager

Audience:

- Authorised Persons Mains
- Accredited Overhead Worker
- Line Managers of Electrical staff
- Accredited Cable Jointer
- Electrical Trainers
- SEQR Advisors and Managers
- Workforce and Apprentice Managers

Main Points:

- To work aloft on the Sydney Trains Electrical Network, workers must be accredited in accordance with ENSR.
- Apprentices who have complete Power line safety can be accredited AES04 Overhead Worker
- Apprentices must always be supervised and cannot work on or pass through live low voltage

Primary Affected Document:

SP D 79055 Electrical Competency Specific Certifications

Scope

This instruction addresses the requirement for Apprentices who may be required to work aloft on the Sydney Trains Electrical Network to hold the relevant Certification to undertake the work.

Note: Apprentices cannot perform any work unsupervised, aloft or at ground level

OFFICIAL

Disclaimer

This document was prepared for use by Sydney Trains and its intended recipient. The information in this document is protected by copyright and no part of this document may be reproduced, altered, stored or transmitted by any person without the prior consent of Sydney Trains. Errors or omissions in this document should be reported to sydneytrainsstandards@transport.nsw.gov.au. Sydney Trains makes no warranties, express or implied, that compliance with the contents of this document shall be sufficient to ensure safe systems or work or operation.

Background

Sydney Trains and TfNSW (Transport for NSW) Electrical Workers shall be certified to undertake work aloft on Electrical Network assets including:

- Aerial Line Structures, wires, and associated cables,
- Substation structures and equipment.

This Engineering Instruction is not intended for work on non-electrical network assets. Only persons accredited with the following certifications are Authorised to work aloft or fulfil the role of Accompanying Person (as they are competent to perform pole top rescue) as specified in [SP D 79055 Electrical-Competency-Specific-Certifications](#)

- AES04 Overhead Worker
- AES15 Authorised Overhead Traction Worker
- AES16 Authorised Traction Operator

Electrical Workers currently complete EE76 Powerline Safety training normally in their first year of their apprenticeship. From 2024 new apprentices will complete the RTW305 Powerline Safety.

The minimum requirements to work aloft on Sydney Trains Electrical Network is accreditation as an AES04 Overhead worker, with requirements for certification & recertification are defined in [SP D 79055 Electrical Competency Specific Certifications](#) 5.

AES04 Overhead Worker is permitted to perform aloft specified functions which the person is otherwise certified/qualified to perform at ground level, in accordance with the ENSR (Electrical Network Safety Rules).

Apprentice Traction Line Workers or Substation Technicians may be accredited as AES04 Overhead Workers.

Apprentice Traction Line Workers or Substation Technicians who are accredited AES04 Overhead Worker can only undertake work they are in training for and only then whilst under direct supervision of a Qualified Trades Person who also is Accredited to work aloft on the Electrical Network.

Note: For working on or passing through live low voltage conductors apprentices who are accredited AES04 Overhead Worker cannot fulfil the role of the accompanying Person and cannot climb through or work on Live Low Voltage.

Action required

All workers who are required to work aloft on the Sydney Trains Electrical Network shall be accredited to undertake the work aloft in accordance with [SP D 79055 Electrical Competency Specific Certifications](#).

- Traction Line Worker, Accredited Cable Jointer, and Substation apprentices on successful completion of Power Line Safety Practices may submit [PR-D-78701-FM07 Verification of Practical Competence for Certification](#) as an AES04 Overhead Worker.
- For initial certification, the trainer assessor who certified the apprentice's Power Line Safety Course can sign as the apprentice supervisor.
- Apprentices who have achieved AES04 Overhead Worker shall annually complete ENSR reaccreditation to maintain AES04 accreditation.
- Apprentices shall maintain a record of working aloft for demonstration of maintaining competence each year when submitting to their line manager [PR D 78701 FM06 Internal Application for Electrical Certification/Re-Certification](#)
- On certification as an Authorised Overhead Traction Worker the person will no longer require AES04 Overhead Worker accreditation previously held whilst an apprentice.

OFFICIAL

Contact

If you have any questions please contact your Line Manager, SEQR Advisor, or the EDU (Electrical Distribution Unit) team via email at RailElectricalSafety@transport.gov.nsw.au

OFFICIAL

**Engineering System Integrity
Electrical Network Safety Rules**

**Engineering Specification
Electrical Distribution Unit**

Personnel Competency

SP D 79055

**Electrical Competency Specific
Certifications**

Version 1.0

Date in Force: 1 February 2022

Approved by: Associate Director
Electrical Distribution Unit
Engineering System Integrity

Authorised by: Engineering Technical
Publications Manager
System Integrity

Disclaimer

This document was prepared for use by persons in connection with works near or on/within the rail network electricity system operated by Sydney Trains. Sydney Trains makes no warranties, express or implied, that compliance with the contents of this document shall be sufficient to ensure safe systems or work or operation. It is the document user's sole responsibility to ensure that the copy of the document it is viewing is the current version of the document as in use by Sydney Trains. To the extent permitted by law, Sydney Trains excludes any and all liability for any loss or damage, however caused (including through negligence), which may be directly or indirectly suffered in connection with the use of this document.

Copyright

The information in this document is protected by copyright and no part of this document may be reproduced, altered, stored or transmitted by any person without the prior consent of Sydney Trains.

Document control

| Version | Date | Author/ Prin. Eng. | Summary of change |
|---------|-----------------|--------------------|---|
| 1.0 | 1 February 2022 | ENSR Project Team | First issue as Sydney Trains document. Extracted from PR D 78701 V3.3 Section 11 Specific certifications. Reviewed as part of the ENSR Project. |

Table of Contents

| | | |
|----------|--|-----------|
| 1 | Purpose | 4 |
| 2 | Definitions | 4 |
| 3 | Authorities | 4 |
| 4 | Requirements for all certifications | 4 |
| 5 | Specific certifications | 5 |
| 5.1 | Accredited Aerial Line (HV and LV) Worker (ELLIPSE Resource Code: MEL56)..... | 6 |
| 5.2 | Accredited OHW Assembler (ELLIPSE Resource Code: MEL55) | 8 |
| 5.3 | Accredited OHW Rigger (ELLIPSE Resource Code: MEL54)..... | 10 |
| 5.4 | Accredited OHW Installer (ELLIPSE Resource Code: MEL52)..... | 12 |
| 5.5 | Accredited OHW Worker (ELLIPSE Resource Code: MEL53)..... | 14 |
| 5.6 | Accredited Electrolysis Interference Tester (ELLIPSE Resource Code: AES02)..... | 16 |
| 5.7 | Accredited Cable Jointer (ELLIPSE Resource Code: AES13) | 17 |
| 5.8 | Overhead Worker (ELLIPSE Resource Code: AES04) | 19 |
| 5.9 | Authorised Overhead Traction Worker (ELLIPSE Resource Code: AES15)..... | 20 |
| 5.10 | Authorised Traction Operator (ELLIPSE Resource Code: AES16) | 21 |
| 5.11 | Authorised Officer (Mains) (ELLIPSE Resource Code: AES06)..... | 23 |
| 5.12 | Authorised Attendant (ELLIPSE Resource Code: AES05) | 25 |
| 5.13 | Authorised Operator (ELLIPSE Resource Code: AES08) | 26 |
| 5.14 | Authorised Officer (Substations) (ELLIPSE Resource Code: AES07) | 29 |
| 5.15 | Electrical Authorising Officer (ELLIPSE Resource Code: AES14) | 31 |
| 5.16 | Authorised Person (Low Voltage) (ELLIPSE Resource Code: AES19)..... | 32 |
| 5.17 | Electrical System Operator (ELLIPSE Resource Code: AES22)..... | 34 |
| 5.18 | Accredited Safety Assistant for Switching Operations (ELLIPSE Resource Code: AES23) .. | 36 |
| 5.19 | Accredited Electrical Permit Holder (ELLIPSE Resource Code: ME161)..... | 37 |
| 5.20 | Accredited for Entry (ELLIPSE Resource Code: AES03)..... | 38 |
| 5.21 | Accredited Substation Permit Holder (ELLIPSE Resource Code: AES24) | 40 |
| | 5.21.1 Maintaining Competency | 41 |
| 6 | Reference documents | 42 |

1 Purpose

This document details the competency requirements for all accreditations, certifications and authorisations required to install, operate, maintain and decommission Electrical Distribution and Rail Traction Networks assets owned by Transport Asset Holding Entity of New South Wales (TAHE) and operated/maintained by Sydney Trains.

The document must be read together with *PR D 78701 Personnel Competency – Electrical*. These documents together form the requirements for certification.

2 Definitions

It is mandatory that this document is read in conjunction with PR D 78701. Definitions can be found in PR D 78701 Section 2 Definitions.

For further definitions, refer to the **Electrical Safety Definitions** page available on the **RailSafe** site.

3 Authorities

Certifying and recertifying authority is the Associate Director Electrical Distribution Unit (delegated as appropriate).

4 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.

5 Specific certifications

Below is the current listing of accreditations or competencies obtainable to work on the Electrical Distribution and Rail Traction Networks maintained by Sydney Trains. These certifications are non-transferable and must be obtained in order to complete associated works.

Table 1: Personnel Certifications

| Section | Certificate | Ellipse code | Organisation* |
|----------------------------|--|--------------|------------------|
| Electrical work | | | |
| 4.1 | Accredited Aerial Line (HV & LV) Worker | MEL56 | External |
| 4.2 | Accredited OHW Assembler | MEL55 | External |
| 4.3 | Accredited OHW Rigger | MEL54 | External |
| 4.4 | Accredited OHW Installer | MEL52 | External |
| 4.5 | Accredited OHW Worker | MEL53 | External |
| 4.6 | Accredited Electrolysis Interference Tester | AES02 | TfNSW |
| 4.7 | Accredited Cable Joiner | AES13 | TfNSW & External |
| 4.8 | Overhead Worker | AES04 | TfNSW |
| 4.9 | Authorised Overhead Traction Worker | AES15 | TfNSW |
| 4.10 | Authorised Traction Operator | AES16 | TfNSW |
| 4.11 | Authorised Officer (Mains) | AES06 | TfNSW |
| 4.12 | Authorised Attendant | AES05 | TfNSW |
| 4.13 | Authorised Operator | AES08 | TfNSW |
| 4.14 | Authorised Officer (Substations) | AES07 | TfNSW |
| 4.15 | Electrical Authorising Officer | AES14 | TfNSW |
| 4.16 | Authorised Person (Low Voltage) | AES19 | TfNSW |
| 4.17 | Electrical System Operator | AES22 | TfNSW |
| 4.18 | Accredited Safety Assistant for Switching Operations | AES23 | TfNSW |
| Non-electrical work | | | |
| 4.19 | Accredited Electrical Permit Holder | ME161 | TfNSW & External |
| 4.20 | Accredited for Entry | AES03 | TfNSW |
| 4.21 | Accredited Substation Permit Holder | AES24 | External |

NOTE

Organisation indicates whether the accreditation can be held only by Transport for NSW (TfNSW) employees or external contractors engaged by TfNSW.

5.1 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 | <ul style="list-style-type: none"> Certificate III in ESI – Power Systems – Rail Traction (National Qualification No UET30719), and UETDRDP12 "Maintain overhead energised LV conductors and cables" or <ul style="list-style-type: none"> Certificate III in ESI – Power Systems – Distribution Overhead (National Qualification No UET30619) | Certificates | None |
| B | Resuscitation. | Practical competency assessment | 1 Year |
| C | 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 |
| H | 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: <ul style="list-style-type: none"> 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 <ul style="list-style-type: none"> obtain the services of another Workplace Assessor and Certificate | Assessment | 1 Year |

| Requirement Identifier | Requirement Description | Evidence required | Recertification period |
|------------------------|---|-------------------|------------------------|
| | III qualified lineworker 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 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 without supervision on earthed high voltage aerial lines
- b. work without supervision on low voltage aerial lines, **excluding work on live LV aerial lines**
- c. test for continuity/live within a Permit area
- d. work to the Safe Approach Distances (SADs) specified for "Accredited Persons" in SP D 79049 Table 1 Minimum SADs to exposed electrical equipment for persons and tools they hold, when in compliance with SP D 79048 Section 4 Accredited Persons, in relation to AC nominal voltages only.
- e. perform Safety Observer duties in accordance with PR D 78700 Section 5.4 Safety Observer.

5.2 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 |
|------------------------|--|---|---|
| A | Appropriate knowledge of the ENSR. (See Note) | Examination Result | 1 Year |
| B | Use of Controlled Descent Device. | Practical competency assessment | 1 Year |
| C | 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 all of the functions listed below, in accordance with the ENSR:

- a. 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
- b. Work to the Safe Approach Distances (SADs) specified for "Accredited Persons" in SP D 79049 Table 1 Minimum SADs to exposed electrical equipment for persons and tools they hold, when in compliance with SP D 79048 Section 4 Accredited Persons, in relation to DC nominal voltages only.

The work performed by an Accredited OHW Assembler **excludes**:

- dropping wires
- performing tasks involving lifting wire weight, pulling against radial load or rigging against conductor or line tension
- running wires
- 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.

5.3 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 Assembler
- 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: <ul style="list-style-type: none"> • Basic rigging (RB), or • Intermediate rigging (RI), or • Advanced rigging (RA). | Licence | None (provided Licence is current) |
| B | Appropriate knowledge of the ENSR. (See Note) | Examination Result | 1 Year |
| C | 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. all functions of the Accredited OHW Assembler, without supervision
- b. dropping wires
- c. tasks involving lifting wire weight, pulling against radial load or rigging against conductor or line tension
- d. work to the Safe Approach Distances (SADs) specified for "Accredited Persons" in SP D 79049 Table 1 Minimum SADs to exposed electrical equipment for persons and tools they hold, when in compliance with SP D 79048 Section 4 Accredited Persons, in relation to DC nominal voltages only

Functions (b) and (c) 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.

5.4 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: <ul style="list-style-type: none"> • Linesman's Certificate issued by the former Department of Energy and supported by evidence of continuous relevant work experience or <ul style="list-style-type: none"> • Certificate III in ESI – Power Systems – Transmission Overhead (National Qualification UET30519) or <ul style="list-style-type: none"> • Certificate III in ESI – Power Systems – Distribution Overhead (National Qualification No UET30619) | Certificate issued by RTO | None |
| B | Appropriate knowledge of the ENSR. (See Note) | Examination Result | 1 Year |
| C | 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. all the functions of the Accredited OHW Rigger
- b. run wires under the general intermittent supervision of an Authorised Overhead Traction Worker or Accredited OHW Worker
- c. work to the Safe Approach Distances (SADs) specified for "Accredited Persons" in SP D 79049 Table 1 Minimum SADs to exposed electrical equipment for

persons and tools they hold, when in compliance with SP D 79048 Section 4 Accredited Persons, in relation to DC nominal voltages only.

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.

5.5 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 |
| B | Releasing a person from live LV electrical apparatus. | Practical competency assessment | 1 Year |
| C | 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 |
| H | <p>Assessment of the person's ability to perform the functions of an Accredited OHW Worker.</p> <p>This Assessment shall be carried out by the person's Supervisor who shall either:</p> <ul style="list-style-type: none"> • be a Workplace Assessor and hold a Certificate III in Electricity Supply Industry – Rail Traction <p>or</p> <ul style="list-style-type: none"> • obtain the services of another Workplace Assessor and Certificate III qualified lineworker as described immediately above. <p>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.</p> | 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 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:

- a. 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
- b. test for continuity/live within Permit area
- c. perform testing of OHW Structure to Rail Bonding
- d. work to the Safe Approach Distances (SADs) specified for "Accredited Persons" in SP D 79049 Table 1 Minimum SADs to exposed electrical equipment for persons and tools they hold, when in compliance with SP D 79048 Section 4 Accredited Persons, in relation to DC nominal voltages only
- e. perform Safety Observer duties in accordance with PR D 78700 Section 5.4 Safety Observer.

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.

5.6 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 |
|------------------------|--|---|------------------------|
| A | Completed The Australasian Corrosion Association Inc. Electrolysis Testers course. | Certificate issued by the Australasian Corrosion Association Inc. | None |
| B | Assessed in the knowledge requirement of the Guide for Measurement of Interference Caused by Cathodic Protection and Railway Drainage Systems. | Assessment by the Principal Engineer Power Systems ESI | 2 Years |
| C | 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. interference testing and installation associated with dc railway traction drainage systems
- b. testing and replacement of OHW structure to rail spark gaps units, excluding installations of spark gaps/Ferraz units and connections to rail
- c. work to the SADs specified for "Accredited Persons" in SP D 79049 Table 1 Minimum SADs to exposed electrical equipment for persons and tools they hold, in relation to DC nominal voltages only.

5.7 Accredited Cable Jinter (ELLIPSE Resource Code: AES13)

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

Table 8: Requirements for Accredited Cable Jinter

| Requirement Identifier | Requirement Description | Evidence required | Recertification period |
|------------------------|--|---------------------------------|------------------------|
| A | <ul style="list-style-type: none"> Certificate III in ESI – Power Systems – Distribution Cable Jointing (National Qualification No UET30819) or <ul style="list-style-type: none"> Certificate III in Electrotechnology Electrician (National Qualification No. UEE30820) or <ul style="list-style-type: none"> Certificate III in Electrical Fitting (National Qualification No. UEE33020) | Certificate | None |
| B | Appropriate knowledge of the ENSR. | Examination Result | 1 Year |
| C | 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 Jinter satisfactorily. This Assessment shall be carried out by the person's Supervisor who shall either: <ul style="list-style-type: none"> be a Workplace Assessor and hold a Certificate III in Electricity Supply Industry – Distribution Cable Jointing or <ul style="list-style-type: none"> obtain the services of another Workplace Assessor and Certificate III qualified Distribution Cable Jinter 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 Form | 1 Year |

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 without supervision on high voltage cables (see Notes 2, 3 and 4)
- b. work without supervision on 1500 Volt cables (see Notes 2, 3, 4 and 5)
- c. work without supervision on low voltage cables (see Note 2)
- d. work to the Safe Approach Distances (SADs) specified for "Accredited Persons" in SP D 79049 Table 1 Minimum SADs to exposed electrical equipment for persons and tools they hold, when in compliance with SP D 79048 Section 4 Accredited Persons.

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.

5.8 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: <ul style="list-style-type: none"> • TfNSW L&D course EE76 Power Line Safety Practices or <ul style="list-style-type: none"> • competency standard unit RIIWHS204D "Work safely at heights". | Certificate or Results Notice from a RTO as appropriate. | None |
| B | Appropriate knowledge of the ENSR. | Examination Result | 1 Year |
| C | 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 |
| H | 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.

5.9 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 |
| B | Appropriate knowledge of the ENSR. | Examination Result | 1 Year |
| C | 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 |
| H | 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 without supervision on earthed high voltage aerial lines
- b. work without supervision on rail-connected 1500 Volt overhead wiring
- c. work, including live work, without supervision on low voltage aerial lines
- d. perform installation and testing of OHW structure to rail bonding, excluding connection to rail
- e. perform electrical work using electrically insulated tools and equipment near or on/within of LIVE 1500 Volt DC equipment
- f. work to the Safe Approach Distances (SADs) specified for "Authorised Persons" in SP D 79049 Table 1 Minimum SADs to exposed electrical equipment for persons and tools they hold.

5.10 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 <ul style="list-style-type: none"> • TfNSW L&D course code EE88 Rail Traction Switching and EE88 Rail Traction Switching Final Assessment or <ul style="list-style-type: none"> • UETDRRT30 Perform to a given schedule rail traction switching operations. | Provide relevant documentation | None |
| B | Undertake behavioural competency assessment | Online Assessment Report | None |
| C | 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 |
| H | 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. hold a Working High Voltage Instruction (WHVI) for aerial lines and associated cables
- b. carry out operating work on High Voltage Aerial Lines, 1500 Volt Overhead Wiring, and Low Voltage switches
- c. issue and retrieve Permits and Operating Agreements for work on high voltage aerial lines and associated cables outside substations
- d. hold a 1500 Volt "Authority"
- e. issue and retrieve Permits and Operating Agreements for work on 1500 Volt overhead wiring and associated cables outside substations
- f. issue a "Notification for the Removal of 1500 Volt Supply in Electric Vehicle Maintenance Centres"
- g. issue and retrieve 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
- h. perform electrical work using electrically insulated tools and equipment near or on/within of LIVE 1500 Volt DC equipment
- i. work to the SADs specified for "Authorised Persons" in SP D 79052 Table 1, in relation to:
 - Low Voltage
 - High Voltage
 - DC nominal voltages up to and including 1500 Volt when performing isolation procedures or test and rail connect procedures
- j. perform Safety Observer duties in accordance with PR D 78700 Section 5.4 Safety Observer.

5.11 Authorised Officer (Mains) (ELLIPSE Resource Code: AES06)

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

- a. 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 |
|------------------------|---|---|------------------------|
| A | Appropriate knowledge of the ENSR. | Examination Result | 1 Year |
| B | Undertake behavioural competency assessment | Online Assessment Report | None |
| C | 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 |
| H | Assessment by the relevant TSS Level 1 Manager or above Line Manager immediately responsible for the person/work activity to verify: <ol style="list-style-type: none"> 1. the business need for nominated function(s), and 2. 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"
- i. if permitted to undertake any of the specified work functions a) to h), work to the SADs specified for "Accredited Persons" in SP D 79049 Table 1 Minimum SADs to exposed electrical equipment for persons and tools they hold
- j. carry out operating work on High Voltage Aerial Lines, 1500 Volt Overhead Wiring, and Low Voltage switches
- k. issue and retrieve 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 and retrieve Permits and Operating Agreements for work on 1500 Volt overhead wiring and cables outside substations
- m. issue and retrieve 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 SP D 79049 Table 1.

5.12 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 documentation | None |
| B | Appropriate knowledge of the ENSR. (refer to Note) | Examination Result | 1 Year |
| C | 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: <ol style="list-style-type: none"> 1. the business need for nominated function(s), and 2. 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.

5.13 Authorised Operator (ELLIPSE Resource Code: AES08)

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

- a. 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 | <ul style="list-style-type: none"> • Competency UETTDRIS43 Perform LV field switching operation to a given schedule or <ul style="list-style-type: none"> • successful completion of TfNSW L&D course codes EL11 Low Voltage Switching and EL37 LV Switching Final Assessment and <ul style="list-style-type: none"> • UETTDRSB39 Perform power system substation switching operation to a given schedule or <ul style="list-style-type: none"> • successful completion of TfNSW L&D course codes EL30 Substation Switching and EL36 Substation Switching Final Assessment. | Provide relevant documentation | None |
| B | Appropriate knowledge of the ENSR. | Examination Result | 1 Year |
| C | 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 |

| Requirement Identifier | Requirement Description | Evidence required | Recertification period |
|------------------------|--|---|------------------------|
| H | 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. enter substations
- b. carry out operating work on all high voltage, 1500 Volt and low voltage equipment (see Note 1)
- c. carry out "electrical work" on "electrical equipment" (see Note 1)
- d. supervise work within substations (see Note 2)
- e. issue, hold and cancel a "Substation Access Permit" (see Note 1)
- f. issue and cancel a "Test Substation Access Permit" (see Note 1)
- g. if specifically authorised by the Associate Director Electrical Distribution Unit, undertake work on operational protection systems associated with the HV AC network
- h. perform electrical work using electrically insulated tools and equipment near or on/within of LIVE 1500 Volt DC equipment
- i. work to the SADs specified for "Authorised Persons" in SP D 79049 Table 1 Minimum SADs to exposed electrical equipment for persons and tools they hold
- j. perform Safety Observer duties in accordance with PR D 78700 Section 5.4 Safety Observer
- 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.

5.14 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 style="list-style-type: none"> • Be an Authorised Operator and • Hold the qualification: Certificate IV in ESI – Power Systems Substations (National Qualification No. UET40519) or <ul style="list-style-type: none"> • Hold a Tertiary Qualification in Electrical Engineering and <ul style="list-style-type: none"> • Hold a qualification relevant to the work functions to be performed (the Associate Director Electrical Distribution Unit will accept or reject such qualification) and <ul style="list-style-type: none"> • Hold the following units of competency from an RTO: <ul style="list-style-type: none"> – as per Authorised Operator, Requirement Identifier "A" – UETTDRSB23 Install and maintain substation DC systems – UETTDRSB22 Carry out power systems substation inspection – UETTDRSB26 Install high current DC equipment and switchgear – UETTDRSB27 Maintain high current DC equipment and switchgear – UETTDRSB21 Diagnose and rectify faults in substation environment. | Certificate or Results Notice from a RTO as appropriate and/or verification of membership to Engineers Australia. | None |
| B | Undertake behavioural competency assessment. | Online Assessment Report | None |
| C | 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 | 1. 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). 2. The person's competence for holding the certification. | Assessment Form | 1 Year |
| H | 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:
 - i. test and verify correct operation of protection systems associated with the HV ac network
 - ii. approve an "Advice of Alteration to Electrical System Operating Diagrams".

5.15 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: <ul style="list-style-type: none"> • Authorised Officer (Mains) or <ul style="list-style-type: none"> • Authorised Officer (Substations) and be certified by the Associate Director Electrical Distribution Unit as being capable of performing specified functions of an: <ul style="list-style-type: none"> • Authorised Officer (Mains) or <ul style="list-style-type: none"> • Authorised Officer (Substations). | Work history | None |
| B | Undertake behavioural competency assessment. | Online Assessment Report | None |
| C | 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.

5.16 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 | <ul style="list-style-type: none"> • UETDRIS43 Perform LV field switching operation to a given schedule or <ul style="list-style-type: none"> • successful completion of TfNSW L&D course codes EL11 Low Voltage Switching and EL37 LV Switching Final Assessment. | Provide relevant documentation | None |
| B | Appropriate knowledge of the ENSR. | Examination Result | 1 Year |
| C | 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: <ul style="list-style-type: none"> • an Authorised Person (Low Voltage) or <ul style="list-style-type: none"> • 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. carry out electrical work on Low Voltage Installations, including live electrical work, in accordance with *D2013/80873 Work on Low Voltage Installations*
- b. operate Low Voltage switches on the Low Voltage Distribution Network or Low Voltage Installations
- c. issue and retrieve Low Voltage Access Permits
- d. supervise or carry out electrical work on the Low Voltage Distribution Network or Low Voltage Installations

- e. perform a termination or joint on a 1500 Volt polymeric cable if the person:
 - i. is an Overhead Worker if required to work aloft
 - ii. is covered by the Sydney Trains "Substation/Low Voltage Electrical" Classification Structure and is at or above Level 3.2 of that Classification Structure
 - iii. 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.
- f. work to the **AC Low Voltage** SAD specified for "Authorised Persons" in SP D 79049 Table 1 Minimum SADs to exposed electrical equipment for persons and tools they hold.

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

- *T HR SS 80002 ST Low Voltage Electrical Installations.*
-

5.17 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
- b. meet all the requirements in Table 18.

Table 18: Requirements for Electrical System Operator

| Requirement Identifier | Requirement Description | Evidence required | Recertification period |
|------------------------|--|---|------------------------|
| A | 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 documentation | None |
| B | Undertake behavioural competency assessment. | Online Assessment Report | None |
| C | Complete Sydney Trains Electrical System Operator training course. | Provide relevant documentation | 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: <ol style="list-style-type: none"> 1. the business need for nominated function(s) 2. 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. write/issue and check a Working High Voltage Instruction (WHVI)
- b. write/issue and check a 1500 Volt "Authority"
- c. remote operations of TAHE's Electrical Network
- d. hold a "verbal" Operating Agreement between participating Distribution Network Service Provider (DNSP) Electrical Network control centres
- e. regulate TAHE's Electrical Network supply
- f. parallel other DNSPs Electrical Networks through the TAHE Electrical Network
- g. suspend Electrical Authorisations following an electrical safety incident
- h. enter Substations/Sectioning Huts
- i. approve an "Advice of Alteration to Electrical System Operating Diagrams".

5.18 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: <ul style="list-style-type: none"> • TfNSW L&D course (EAW01E) Electrical Safety Awareness eLearning or <ul style="list-style-type: none"> • TfNSW L&D course (EJ22) Introduction to Electrical Network Safety Rules. | Examination Result | None |
| B | Successfully completed the TfNSW L&D course (SM06) Hazardous Manual Tasks. | Examination Result | Assessment by Manager |
| C | 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. accompany an Authorised Person while the Authorised Person undertakes duties associated with switching operations
- b. perform the function of Safety Assistant to the SADs specified for "Accredited Persons" in SP D 79049 Table 1 Minimum SADs to exposed electrical equipment for persons and tools they hold.

5.19 Accredited Electrical Permit Holder (ELLPSE Resource Code: ME161)

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 |
| B | Successfully completed the Electrical Permit Holder Course. | Examination Result | None |
| C | 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. hold an Electrical Permit to Work
- b. hold a Substation Access Permit issued for work on 1500 Volt negative equipment outside a substation
- c. work to the SADs specified for "Accredited Persons" in SP D 79049 Table 1
 Minimum SADs to exposed electrical equipment for persons and tools they hold.

5.20 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: <ul style="list-style-type: none"> • the business need for nominated function(s) and <ul style="list-style-type: none"> • 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 |
| B | For initial certification, the candidate shall complete <i>PR D 78701 FM04 Application for Certification/Recertification in Accredited for Entry (AES03) Item 3 Training</i> . | Completion of PR D 78701 FM04 Item 3 Training | None |
| C | 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 enter substations to perform the following specified functions **without** the use of tools:

- a. deliver/replace Operating Diagrams or substation consumables, including restocking of first aid kits
- b. conduct **visual** inspections and review associated documentation for items such as first aid kits, ladders, Operating Diagrams, etc.
- c. use substation facilities, i.e. phone, toilet, shower, hand basin
- d. check next inspection date for earth sets, operating sticks and test equipment not currently in use
- e. access fire extinguishers for periodical checks

- f. access fire control panels for routine periodical checks (see Note 2)
- g. work to the SADs specified for "Accredited Persons" in SP D 79049 Table 1
Minimum SADs to exposed electrical equipment for persons and tools they hold.

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).
-

5.21 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 authorisation:

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 authorisation 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 ElectricalAssessments@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 |
| B | Holds the following electrical qualifications: <ul style="list-style-type: none"> • 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 |
| C | Successfully completed the Accredited Substation Permit Holder Initial Training Course (ESP01). | Examination Result | 1 Year |
| D | <ul style="list-style-type: none"> • UETDRRF10 – Provide first aid in an ESI environment and <ul style="list-style-type: none"> • HLTAID009 – Provide cardiopulmonary resuscitation. | Practical competency assessment | 1 Year |

| Requirement Identifier | Requirement Description | Evidence required | Recertification period |
|------------------------|---|---------------------------------|------------------------|
| 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. receive and hold only one Substation Access Permit at a time
- b. instruct the persons signing onto the Substation Access Permit
- c. 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*
- d. work to the SADs specified for "Accredited Persons" in SP D 79049 Table 1 Minimum SADs to exposed electrical equipment for persons and tools they hold.

An Accredited Substation Permit Holder:

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

5.21.1 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.

6 Reference documents

It is mandatory that this document is read in conjunction with PR D 78701. Relevant reference documents can be found in PR D 78701 Section 12 Reference documents.

AS/NZS 3000 Electrical Installations (known as the Wiring Rules)

D2013/80873 Work on Low Voltage Installations

GL D 79104 Assessment Guide for AES24 Accredited Substation Permit Holder

Guide for Measurement of Interference Caused by Cathodic Protection and Railway Drainage Systems

PR D 78502 Substation Access Permit

PR D 78700 Working around Electrical Equipment

PR D 78701 Personnel Competency – Electrical

PR D 78701 FM04 Application for Certification/Recertification in Accredited for Entry (AES03)

Service and Installation Rules of New South Wales

SP D 79048 Competence of Persons

SP D 79049 Safe Approach Distances (SADs)

T HR EL 17001 ST Electrical Distribution System Installation Connection and Inspection

T HR SS 80002 ST Low Voltage Electrical Installations