Network Safety Management System
SPECIFICATION
SAF/SPC/5178/ELE/NET

WORKING IN THE ELECTRIFIED AREA

Version 1.0

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Authorisation

This document is approved by: GM Network Assets

This document is authorised by: VP Network Operations

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Revision History

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Terminology

Throughout this document:

- the terms “must” and “shall” indicate the statement is mandatory; and
- the term “should” indicates the statement is non-mandatory, i.e. advisory or recommended.
MODULE 1 –
INSTRUCTIONS FOR NON-TRACTION STAFF
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1 Purpose

The purpose of this Module is to outline the basic safety requirements for all staff when they are working in Aurizon Network’s High Voltage (HV) electrified areas.

2 Scope

This Module applies to staff and contractors working in the HV electrified areas.

3 Associated Documents

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<tr>
<td>NET-ELE-RD-5177</td>
<td>Electric Traction – Useful Terms &amp; Definitions</td>
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<td>Electric Control Room Instructions</td>
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<td>FORM-QRS-0009</td>
<td>Request to Work In Electrified Area</td>
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4 Legislation

The Electrical Safety Act 2002 (Queensland) and associated documents apply.

5 Safety Principles

Workers shall always treat the HV electric traction infrastructure as LIVE and DANGEROUS.

Overhead line equipment, power systems equipment, pantographs and roof-mounted electrical equipment on trains are extremely dangerous and can be fatal if you touch or go near to them, or if you allow anything to touch or go near to them. You shall treat these items as being LIVE at all times.

No work shall commence within 3 metres of the overhead line equipment without the correct level of approval. Approvals depend on the type of work activity to be performed within the electrified areas as outlined within this Module.

6 Competencies

The roles outlined in this Module shall be carried out by workers who have been trained and deemed competent to undertake the necessary roles and associated responsibilities.
7 Working within Electrical Exclusion Zones

The Electrical Safety Act 2002 (Queensland) specifies exclusion zones for work around LIVE electrical equipment.

Aurizon Network’s electrical exclusion zone is 3 metres from any LIVE electric traction infrastructure—refer to Figure 1-1 below.

Aurizon sets the electrical exclusion zone for Authorised Persons and Instructed Persons at 1.3 metres (An Instructed Person is a worker acting under the direct supervision of an Authorised Person).

If there is a possibility that your work—including the use of any plant, tools, or materials—could come within the electrical exclusion zone you must have:

- a Safe Work Method Statement approved; and
- an Authorised Person appointed.

You must not carry out any work above LIVE electric traction infrastructure unless a written Safe Work Method Statement has been approved by the owner of the electrical equipment.

![Figure 1-1 Electrical Exclusion Zone](image-url)
8 Safe Work Method Statements

Working on and around the LIVE electrified track is classed as High Risk Construction Work and a Safe Work Method Statement must be in place.

A Safe Work Method Statement shall be a written statement for the activity to be performed in the LIVE electrified area. It shall be prepared by or under the direction of the relevant manager for the activity and shall contain all of the following:

a) The activity to be performed.
b) The specific control measures that the relevant manager proposes to use to discharge their work health and safety duty for the activity.
c) The way the relevant manager proposes to perform the activity, including how the control measures are to be used.
d) How the effectiveness of the control measures shall be monitored and reviewed.

An example of how the effectiveness of a control measure may be monitored:

Before work starts each day the Authorised Person and operator shall review the activity and the Safe Work Method Statement and conduct a pre-start brief for all workers involved in the activity.

The Safe Work Method Statement shall be signed off by the appropriate Line Manager who has the level of authority to sign off the risk as assessed when complying with PRI/0014/COR Safety Risk Management.

The Safe Work Method Statement shall outline sufficient control measures to ensure the electrical safety of workers, plant and materials.

A Safe Work Method Statement may be a generic work method statement prepared for workplaces where the activity is to be performed in the same way in the same or similar circumstances.
9 Qualified Persons

9.1 Authorised Person

In Aurizon Network, the Authorised Person is the authorised person as mentioned in the Electrical Safety Act 2002 (Queensland). Workers whose electrical safety is directly controlled by an Authorised Person are Instructed Persons.

If work has the potential to come closer than 3 metres to LIVE overhead line equipment, an Authorised Person shall be in place at all times to supervise the electrical safety aspect of the work.

Authorised Persons and Instructed Persons may work with a reduced Exclusion Zone of 1.3 metres.

9.2 Electric Control Operator

The Electric Control Operator (ECO) is the worker who monitors, manages and controls the power supply to the overhead line equipment and is responsible for controlling all switching operations and isolations of HV electric traction infrastructure.

Blackwater ECO controls the Blackwater System.

Goonyella ECO controls the Goonyella System.

9.3 Form B Holder

The Form B Holder is a qualified Nominated Person or a trainee Nominated Person under the direct supervision of a qualified Nominated Person who is responsible for:

- the isolation process in conjunction with the ECO;
- the Form B – Authority for Testing, Earthing;
- issuing Permits to Work Near (Form C) and Access Permits.

The Form B Holder is the only person who shall communicate the details of the Form B with the Electric Control Operator during the isolation and as such shall follow the Electric Control Operator’s instructions.

9.4 Nominated Person

A Nominated Person (NP) is a person who is qualified and approved by Aurizon Network to switch, test, apply earths and issue permits.

9.5 Subsidiary Nominated Person

A Subsidiary Nominated Person (SNP) is a qualified Nominated Person, acting under the instructions of the Form B Holder or the Access Permit Recipient.
10 Working during Isolations

All isolations shall be planned and approved in advance. To work during a Planned Isolation a “Request to Work in Electrified Area” Form, FORM-QRS-0009 (available via iN-Gauge) shall be completed and issued to the appropriate Isolation Planning Coordinator.

Electrical safety advice can be sought from the local Traction Power Engineer or the local Isolation Planner.

10.1 Form C – Permit to Work NEAR

The Isolation Planning Coordinator shall determine which workgroups are to be issued with a Form C – Permit to Work NEAR.

An Authorised Person shall be appointed by line management. The Authorised Person is responsible for:

- receiving and surrendering the Form C – Permit to Work NEAR;
- the electrical safety of the workers;
- giving a pre-start safety brief to the workers.

Permits shall be issued to Authorised Persons at pre-determined times and locations.

Permits shall be cancelled at the specified times and locations.

If contact is made with the electric traction infrastructure then the Authorised Person shall contact the Form B Holder or Electric Control Operator immediately.

10.2 Issuing Form C – Permit to Work NEAR

The Form B Holder or Subsidiary Nominated Person issuing a Form C – Permit to Work NEAR shall:

- check the Authorised Person’s credentials.
- communicate worksite electrical safety information to the Authorised Person. This shall include, but not be limited to; isolation duration and times, work-site limits, any nearby LIVE equipment and hazards.
- inform the Authorised Person of the rules associated with the Form C – Permit to Work NEAR as outlined on the cover of the Form C books.
- communicate the Authorised Person transfer process.
- ensure the Authorised Person reads out, understands and signs the Authorised Person declaration.

10.3 Receiving the Form C – Permit to Work NEAR

Only an Authorised Person can receive permits from a Form B Holder or Subsidiary Nominated Person. Authorised Persons receiving Form C – Permits to Work NEAR shall:

- show credentials to the Form B Holder / Subsidiary Nominated Person;
- follow the Form B Holder / Subsidiary Nominated Person’s instructions;
- sign the Authorised Person Declaration in front of the Form B Holder / Subsidiary Nominated Person;
- keep the permit in your possession and not leave it unattended on site;
- remain on-site whenever work is being carried out;
- transfer the permit only to another Authorised Person;
- ensure any LIVE infrastructure adjacent to the worksite is communicated to the work group.
Permits shall not be copied or duplicated.

**A Form C – Permit to Work NEAR does not absolve the Authorised Person from ensuring that adequate track protection has been provided. Track protection must ensure that trains cannot inadvertently enter the Worksite.**

### 10.4 Transferring Form C – Permit to Work NEAR

An Authorised Person may transfer the permit as required, however an Authorised Person can only be relieved by another Authorised Person. The transfer shall be documented on the Form C – Permit to Work NEAR and the relief Authorised Person shall inform the Form B Holder or Electric Control Operator immediately.

### 10.5 Surrendering the Form C – Permit to Work NEAR

The Authorised Person shall ensure all workers and materials are clear of the track and treat the HV electric traction infrastructure as **LIVE** and **DANGEROUS**. The Authorised Person shall complete Part 3 of the Form C – Permit to Work NEAR.

The Form B Holder / Subsidiary Nominated Person shall:

- confirm that the Authorised Person surrendering the Form C – Permit to Work NEAR is the duly appointed Authorised Person;
- confirm with the Authorised Person that no contact has been made with electric traction infrastructure;
- ensure the Authorised Person reads out and understands the statement in the Clearance section of the permit and has advised their workers that the Form C – Permit to Work NEAR and all associated access has been cancelled;
- confirm the Authorised Person has signed the Clearance Declaration;
- instruct the Authorised Person that the overhead line equipment shall now be regarded as **LIVE** and **DANGEROUS**.

### 10.5.1 Bonding

#### 10.5.1.1 Bonding Requirements during Maintenance Shutdowns Isolations

During Maintenance Shutdown (MS) Isolations only: where the rail is required to be cut or bonds are to be removed and or replaced within the limits of the isolation; then temporary bonds are not required to be installed around the repair site.

All bonds shall be re-installed before the isolation can be cancelled. If the repair work cannot be completed within the timeframes of the isolation, temporary bonding shall be installed to ensure electrical safety.

#### 10.5.1.2 Bonding Requirements all other times

Temporary bonds shall be applied around repair work where the rail is to be cut or removed to ensure electrical safety during all isolations not classed as MS Isolations.

If bonding requirements are unclear, advice can be sought from the local Traction Engineering Staff.