

Engineering System Integrity
Electrical Network Safety Rules

Engineering Specification
Electrical Distribution Unit

Working Near or On/Within

SP D 79053

**Risk Management: Mobile Plant in
proximity to aerial lines and
Overhead Wiring**

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Document control

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1.0	1 February 2022	ENSR Project Team	First issue as Sydney Trains document. Extracted from SMS-06-GD-0268 V3.2. Reviewed as part of the ENSR Project.

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1 Introduction

This document provides general guidance on the reasonable practicability of controlling the risk of working with mobile plant around aerial lines by eliminating the risk through:

- removing the aerial line away from the worksite (by either deviating the aerial line or undergrounding)

OR

- arranging for an Electrical Permit to be issued for the aerial line.

WARNING

If the risk assessment requires removing the aerial line or a permit issue, no work can commence until these steps are complete.

2 Definitions

Refer to the **Electrical Safety Definitions** page available on the **RailSafe** site.

3 Worksites using mobile plant

Information below breaks down the practical aspects of aerial line removal and the appropriate risk mitigation requirements:

3.1 1500 Volt Overhead Wiring

It is **not reasonably practical** to consider the removal of 1500 Volt DC Overhead Wiring away from a worksite as this would also require the deviation of the associated track under the Overhead Wiring concerned or the closing of the track to electric rolling stock.

3.2 High Voltage aerial lines

Only in exceptional circumstances would consideration be given to the removal of an aerial line from a mobile plant worksite. This is due to the complexity of the design and documentation, cost and resource intensiveness of the work.

The decision to implement this control would normally require the approval of the Asset Manager Electrical.

3.3 Low Voltage aerial lines

Only in circumstances involving a mobile plant worksite operating over a period of prolonged duration would consideration be given to the removal of a low voltage aerial line from a mobile plant worksite. This is due to the cost and resource intensiveness of the work.

The decision to implement this control would normally require the approval of the Asset Manager Electrical.

4 The reasonable practicability of obtaining an Electrical Permit for a mobile plant worksite

4.1 1500 Volt Overhead Wiring

Planning for work using mobile plant requiring an Electrical Permit to be issued for a section of 1500 Volt Overhead Wiring must include an enquiry to the Regional Electrical Engineer concerned as to the next planned possession/power off period for the track and Overhead Wiring section concerned.

In general, planned power off periods for most sections of the 1500 Volt Overhead Wiring system for continuous periods of up to 7 days occur at least once annually and Electrical Permits for a section have to fit in with the track possession/power outage configurations which are planned 12 months in advance. A suitable track possession/power outage may be available by chance at shorter notice and the Track Access Coordinator should be consulted as to the availability of obtaining an Electrical Permit when planning for the work.

It is stressed that the existence of a planned track possession and power outage for a particular section of Overhead Wiring does not guarantee the issue of an Electrical Permit due to the limited resources available to perform this Electrical Permit issuing.

When an Electrical Permit is to be requested, form *PR D 78501 FM01 Request for Electrical Permit to Work* must be completed and submitted to the Regional Electrical Engineer concerned.

4.2 High Voltage aerial lines

Planning for work using mobile plant requiring an Electrical Permit to be issued for a High Voltage aerial line must include an enquiry to the Electrical Network Manager as to the next planned maintenance isolation for the aerial line concerned.

High Voltage aerial line isolations generally do not have the same operational impacts as 1500 Volt isolations and it may be possible for a high voltage aerial line isolation to be arranged specifically for the mobile plant work.

For short duration (single day and clear of peak hours) worksites, it is generally reasonably practicable to obtain an Electrical Permit for a high voltage aerial line. If the isolation of the high voltage aerial line affects supplies to Transport Asset Holding Entity of New South Wales (TAHE) locations such as workshops, signal and communication systems, and/or private customers, longer planning times would be involved due to arrangements necessary to find a suitable time for the interruption to supply to the customer or the arranging of alternate supply to the customer.

It is stressed that neither the existence of a planned maintenance isolation for a particular high voltage aerial line, nor submitting a request for an Electrical Permit guarantees that a suitable isolation and permit issue will be possible.

For longer duration worksites (multiple day or requiring isolations over the peak hours), longer planning times will be required. This planning must include the Electrical Network Manager. Generally, weekday isolations must be planned to be clear of peak hours.

4.3 Low Voltage aerial lines

Planning for work using mobile plant requiring an Electrical Permit to be issued for a Low Voltage aerial line must include an enquiry to the business units Electrical Representatives accountable for the LV aerial Lines as to the next planned maintenance isolation for the aerial line concerned.

5 Reference document

PR D 78501 FM01 Request for Electrical Permit to Work