

RL D 79802

Electrical Distribution Network Management

1 Principle

The Electrical Network and Electrical Equipment operated by Sydney Trains is to be designed, constructed, commissioned, operated and decommissioned (or any part of its network) in a safe manner per the Sydney Trains Electricity Distribution Network Management Plan as well as the ENSR. This is to ensure the safety of all workers, contractors and members of the public.

2 Network configuration

The configuration and operation of the High Voltage Electrical Network and Low Voltage distribution, e.g. signalling and station supplies as well as the 1500 Volt traction, shall be controlled by ICON Electrical as per the Operator Procedures and Trouble Instructions.

NOTE

An exception to this is the Electric Vehicle Maintenance Centres for the isolation and rail connection of specific roads for work on rail mounted vehicles only.

2.1 Operation of high voltage and 1500 Volt equipment

Only appropriately Authorised Persons, as stipulated in the guide *PR D 78701 Personnel Certifications – Electrical*, are permitted to operate high voltage and 1500 Volt equipment. Refer to the procedure for all actions and activities required.

2.2 Removal of supply for Planned Safe Access to Electrical Equipment on the Network

For safe access to Electrical Equipment the required equipment shall be isolated and secured so that it cannot be inadvertently re-energised:

1. The isolated equipment, points of isolation and safety earths as well as any relevant electrical hazards shall be detailed in an Electrical Access Authority (EAA) as per:
 - *PR D 78201 Removal and Restoration of High Voltage Supply*
 - *PR D 78301 Removal and Restoration of 1500 Volt Supply*
 - *PR D 78401 Isolation and Energisation of Low Voltage Equipment*
 - *PR D 78501 Electrical Permit to Work.*

Or

2. Isolated and Rail Connected per the approved processes to access specific roads for work on rail mounted vehicles only.



2.3 1500 Volt Rescue Power Outage

Where there is an immediate threat to human life a Rescue Power Outage (RPO) may be used instead of an EAA to isolate the 1500 Volt DC overhead wiring per PR D 78301 to:

- protect casualties from further injury
- allow rescuers to come near or touch the 1500 Volt overhead wiring for the purpose of affecting a rescue.

3 Switching

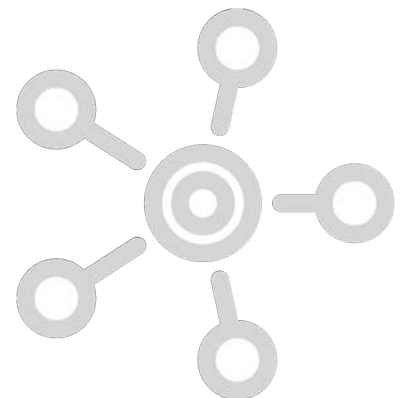
Switching shall be directed by the controlling authority, i.e.:

- Network configuration – ICON Electrical
- Specific Roads at Electrical Maintenance Centres – Yard Controller
- Low Voltage Installations – Area Manager.

All operational work including switching must be performed by an authorised person and carried out as per the Equipment Local Instructions and/or approved process as required.

4 Safe to energise

Electrical Equipment shall be confirmed fit for service prior to being energised at service voltage.



5 Reference documents

The following documents provide a subset of relevant supporting information. This list is not exhaustive:

PR D 78104 Securing Systems for Electrical Equipment

PR D 78201 Removal and Restoration of High Voltage Supply

PR D 78202 Working High Voltage Instruction

PR D 78202 FM01 Working High Voltage Instruction (WHVI)

PR D 78203 High Voltage Operating Procedure

PR D 78301 Removal and Restoration of 1500 Volt Supply

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

PR D 78302 1500 Volt Authority

PR D 78302 FM01 Authority for Removal of Supply from 1500 Volt Sections

PR D 78303 Work on 1500 Volt Negative Equipment Outside Substations

PR D 78304 Work on 1500 Volt Negative Equipment Inside Substations

PR D 78305 1500 Volt Operating Procedures

PR D 78306 1500 Volt DC Overhead Wiring Structure to Rail Voltage Test

PR D 78401 Isolation and Energisation of Low Voltage Equipment

PR D 78402 Work on the Low Voltage Distribution System

PR D 78501 Electrical Permit to Work

PR D 78504 Operating Agreements

PR D 78504 FM01 Operating Agreement

PR D 78700 Working around Electrical Equipment

PR D 78701 Personnel Certifications – Electrical

RL D 79800 Electrical Network Safety Rules

SP D 79035 Sydney Trains Electricity Distribution Network Management Plan

SP D 79047 Earthing of High Voltage Equipment Using Portable Earthing Equipment

SP D 79054 Inspection and Testing of Fixed Electrical Equipment

SP D 79056 Special exception from working to the ENSR

SP D 79056 FM01 Electrical Network Safety Rules Waiver



6 Document properties

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1.0	1 February 2022	ENSR Project Team	First issue as Sydney Trains document. Extracted from PR D 78000 Electrical Network Safety Rules and PR D 78101 General Requirements for Electrical Work. Reviewed as part of the ENSR Project.

