



**AUSTRALIAN RAIL TRACK CORPORATION LTD**

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**Discipline**

**Engineering Standard - NSW**

**Category**

**Electrical**

**Title**

**Overview of the Australian Rail Track Corporation  
Electric Power System Safe Operation Manual**

**Reference Number**

**POP 03 - (RIC Standard: EP 95 00 00 13 SP)**

**Document Control**

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## **Document Approval**

The technical content of this document has been approved by the relevant ARTC engineering authority and has also been endorsed by the ARTC Safety Committee.

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## **About This Standard**

This publication sets out the minimum requirements for elements that are to be included in any Contractor's Electrical Safety System for work on the Australian Rail Track Corporation's Electricity Distribution and 1500V Traction Systems.

## Document History

**Primary Source** – RIC Standard EP 95 00 00 13 SP Version 1.0

### List of Amendments –

ISSUE	DATE	CLAUSE	DESCRIPTION
1.1	05/01/2005		Reformatted to ARTC Standard
1.2	11/03/2005	Disclaimer	Minor editorial change

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## 1 Contractor's Electrical Safety System

All ARTC Contractors are required to have in place an Electrical Safety System that includes/addresses as a minimum the elements as listed in this publication.

Controlled copies of the Contractor's Electrical Safety System are to be lodged with:

- Principal Electrical Engineer, Rail Access Division, Australian Rail Track Corporation
- System Control Engineer, State Rail Authority

Nothing in the Contractor's Electrical Safety System shall prevent a person from taking such action as may be necessary and appropriate in an emergency involving danger to human life.

## 2 Copyright

Where it is nominated that the publication is to be included with only minor customisation, the intent is that contractors will adopt the text of the publication. Customisation will be limited to the substitution of the authorisations and types of permits specific to the contractor's electrical safety system in place of the generic terms used. Additionally it includes amending the referencing from ARTC documents to the relevant sections of the Contractor's Electrical Safety System.

The publications listed within this document is copyright of Australian Rail Track Corporation. Copyright release is granted to contractors on the basis that the information is used solely for production of the Contractor's Electrical Safety System for use on the ARTC system. All other use will be deemed an infringement of copyright unless the appropriate copyright release has been obtained.

## 3 User Documentation

The contractor shall document its Electrical Safety System in one or more manuals. These manuals shall be controlled documents. Every person required to be responsible for the safe and proper carrying out of any procedure set out in the contractor's Electrical Safety System shall have ready access to a controlled copy of the relevant manual at the time of operating the system. The manuals shall include all necessary information regarding the operation of ARTC's Electricity Distribution System assets and the interface with the SRA as ARTC's Electricity Distribution System Control contractor.

## **4. General**

### **4.1 Definitions**

ARTC publication PGS 02 defines items that are used throughout ARTC electrical publications. The Electrical Safety System shall include a section on definitions based upon this document.

### **4.2 Electric Power System – Safety Aspects**

The text of ARTC publication PGS 02 is to be included with minor customisation.

### **4.3 Authorisation and Training of Personnel**

The contractor shall have a system covering the authorisation and training of staff. The system is to comply with the requirements as detailed in ARTC publication PGP 01.

### **4.4 Hazard Assessment and Work Process Controls**

The contractor shall have a system covering hazard assessment and work process controls. The system is to comply with the requirements as detailed in ARTC publication PGP 02.

### **4.5 Tools and Safety Equipment**

The contractor shall have a system covering tools and safety equipment. The system is to comply with the requirements as detailed in ARTC publication PMP 05.

### **4.6 Suitable Operating Equipment**

The contractor shall have a system covering operating equipment. The system is to comply with the requirements as detailed in ARTC publication POP 02.

### **4.7 Permit System**

The contractor shall have a system covering the issue and retrieval of permits. The system is to comply with the requirements as detailed in ARTC publication PMP 06.

### **4.8 Operating Agreement**

The text of ARTC publication PYP 01 is to be included with minor customisation.



#### **4.9 Requirements for Work Using Cranes and Plant**

The text of ARTC publication P is to be included with minor customisation.

#### **4.10 Requirements for Work Using Scaffolding and Metal Ladders**

The text of ARTC publication PMP 07 is to be included with minor customisation.

#### **4.11 Advertising of New Work**

The contractor shall have a system to cover advertising of new work. The system is to comply with the requirements as detailed in ARTC publication PCP 06.

## **5. High Voltage**

### **5.1 Work Near High Voltage Equipment – Permit Requirements and Safe Working Distances**

The text of ARTC publication PMP 09 is to be included with minor customisation.

### **5.2 Work on Live High Voltage Equipment**

The contractor shall have a system to cover work on live high voltage equipment if this method of working is to be utilised. The system is to comply with the requirements as detailed in ARTC publication PMP 10.

### **5.3 Isolation of High Voltage Overhead Lines and Cables for Work Outside Substations**

The text of ARTC publication PMP 11 is to be included with minor customisation.

The contractor is required to amend Sections 4.2 and 4.3 to suit their particular enterprise and electrical safety system.

### **5.4 Isolation of High Voltage Equipment for Work Inside Substations**

The text of ARTC publication PMP 11 is to be included with minor customisation.

### **5.5 Operating Work – High Voltage System**

The text of ARTC publication POP 05 is to be included with minor customisation.

### **5.6 Requirements for Portable Earthing Equipment for the High Voltage System**

The contractor shall have a system to cover portable earthing equipment for the high voltage system. The system is to comply with the requirements as detailed in ARTC publication PMS 01 and Electricity Council publication EC14 – “Guide to Electrical Workers’ Safety Equipment”.

## **6. 1500 Volt**

### **6.1 Work Near 1500 Volt Equipment – Permit Requirements and Safe Working Distances**

The text of ARTC publication PMP 13 is to be included with minor customisation.

### **6.2 Work on Live 1500 Volt Overhead Wiring**

If the contractor requires utilising working on live 1500 volt overhead wiring, then the text of RailCorp publication EP 95 20 00 02 SI is to be included with minor customisation.

### **6.3 Isolation of 1500 Volt Overhead Lines and Cables for Work Outside Substations**

The text of RailCorp publication EP 95 20 00 03 SI is to be included with minor customisation.

The contractor is required to amend Sections 4.2 and 4.3 to suit their particular enterprise and electrical safety system.

Where no electric vehicle maintenance centers exist within the bounds of the contractors area of coverage then Section 9 may be deleted.

### **6.4 Isolation of 1500 Volt Equipment for Work Inside Substations**

The text of RailCorp publication EP 95 20 00 04 SI is to be included with minor customisation.

### **6.5 Operating Work – 1500 Volt System**

The text of RailCorp publication EP 95 20 00 05 SI is to be included with minor customisation.

Where equipment types nominated are not located within the contractor's area of coverage then these sections can be omitted from the contractors electrical safety system.

### **6.6. Methods of Rail Connecting 1500 Volt Overhead Wiring**

The text of RailCorp publication EP 95 20 00 06 SI is to be included with minor customisation.

Where rail-connecting types nominated are not located within the contractor's area of coverage then these sections can be omitted from the contractors electrical safety system.

### **6.7 Requirements for Test Equipment for Determining if it is Safe to Apply Rail Connections**

The contractor is required to have a system to cover test equipment for determining if it is safe to apply rail connections. This system is to comply with RailCorp publication EP 95 20 00 07 SP and Electricity Council publication EC14 – "Guide to

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Electrical Workers' Safety Equipment".

### **6.8 Removal of 1500 Volt Supply Under Emergency Conditions**

The text of RailCorp publication EP 95 20 00 08 SI is to be included with minor customisation.

### **6.9 Procedures for Work on Negative Equipment Outside Substations**

The text of RailCorp publication EP 95 20 00 09 SI is to be included with minor customisation.

Sections 4.2 and 4.3 require the contractor to document systems for testing and working on spark gaps and rail bonds. These systems are to substitute for Sections 4.2 and 4.3

### **6.10 Procedures for Work on Negative Equipment Inside Substations**

The text of RailCorp publication EP 95 20 00 10 SI is to be included with minor customisation.

### **6.11 Requirements for Safety Systems for Electric Vehicle Maintenance Centers**

*IWMP contractors are required to include sufficient information from RailCorp publication EP 95 20 00 11 SP to ensure their staff are aware of the different procedures that exist in electric vehicle maintenance centers as applicable to their geographic area.*

*Electric vehicle maintenance center operators and owners are required to have systems in place to comply with RailCorp publication EP 95 20 00 11 SP.*

## **7 Low Voltage**

### **7.1 Work On or Near Low Voltage Distribution Equipment – Permit Requirements and Safe Working Distances**

The text of ARTC publication PMP 14 is to be included with minor customisation.

The contractor is required to amend Section 3 to suit the particular Permit requirements of their electrical Safety System.

The contractor is required to address the issue of work on or near live equipment, Section 4.1.1. and Section 4.2.1

### **7.2 Isolation of Low Voltage Distribution Equipment for Work**

The text of ARTC publication PMP 15 is to be included with minor customisation.

### **7.3 Operating Work – Low Voltage Distribution System**

The text of ARTC publication POP 06 is to be included with minor customisation.

## **8. Verification Mechanisms**

A contractor's Electrical Safety System shall include a plan for verifying that the requirements of that system are being complied with by the contractor's employees. The plan shall identify potential areas of non-compliance, assess the effect and criticality of the identified areas of non-compliance and prescribe control measures such as regular checks and periodic audits in order to verify compliance with safety critical aspects.