



**AUSTRALIAN RAIL TRACK CORPORATION LTD**

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**Discipline**

**Engineering Standard - NSW**

**Category**

**Electrical**

**Title**

**Standard Voltage Tolerances**

**Reference Number**

**PCS 05 - (RIC Standard: EP 90 10 00 02 SP)**

**Document Control**

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|                       |             | Refer to Reference Number | T Moore                       | M Owens                                  | Refer to minutes of meeting 24/01/05 |

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## **About This Standard**

This standard sets out the maximum voltage variations which can be expected on the ARTC sub-transmission system.

## Document History

**Primary Source** – RIC Standard EP 90 10 00 02 SP Version 2.0

### List of Amendments –

| ISSUE | DATE       | CLAUSE     | DESCRIPTION            |
|-------|------------|------------|------------------------|
| 1.1   | 11/03/2005 | Disclaimer | Minor editorial change |
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## 1 Definitions

Steady state values refer to averages over periods exceeding 2 minutes.

Transient values have a total duration of no more than 10 seconds in any 10 minute period.

## 2 General

ARTC will provide the voltage regulation as set out in section 3 below.

The ARTC network is designed to operate with any one element (transmission line/transformer/regulator etc) out of service. This is referred to as a single contingency failure and the variations set out in section 3 are for the single contingency case.

(With normal h.v. system feeding conditions, the voltage variations can be expected to be only 30% to 50% of the specified values.)

## 3 Voltage Tolerances

### 3.1 Traction Supplies

At the higher voltage terminals of a system transformer the voltage variations will not exceed:

± 10% for steady state

+ 10% - 15% for transients

### 3.2 Signalling & Lighting Supplies

At the low voltage terminals of a distribution transformer the voltage variations will not exceed:

+ 5% - 8% for steady state

+ 8% - 10% for transients

The 'user' must ensure that the load power factor is 0.8 or greater in order for these values to be maintained.