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Engineering Standard - NSW

Category
Electrical

Title
Polarity of AC Signalling Supplies

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About This Standard

The safe operation of 50Hz a.c. signalling track circuits relies on alternate polarities (phase) of adjacent section track feeds. This document sets out the procedures to be followed to ensure the correct phasing of normal supplies to adjacent signalling locations. It also deals with ensuring that the normal and backup supplies at each location are in phase.

Document History

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List of Amendments –

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1.1	11/03/2005	Disclaimer	Minor editorial change

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1 Introduction

The safe operation of 50Hz a.c. signalling track circuits relies on alternate polarities of adjacent section track feeds. Therefore correct phasing of power supply transformers (to within 60 must be maintained so that track circuits at the extremity of one supply transformer maintain the correct polarity with respect to the track circuit at the extremity of the adjacent supply transformer. This requirement does not exist for audio frequency jointless track circuits.

2 Procedure

2.1 Locations with no Backup Supply

a) When the connections of 2kV transformers at locations with submains are being changed, they are to be phased out against the submain at the completion of the work.

b) If it was not possible to check the phasing before the work commenced when a normal supply was worked on (eg a transformer failure of a normal supply) the Signal Engineer must be informed so that the a.c. track circuits at the extremities of the area fed from the location can be checked for correct phasing with the track circuits fed from an adjacent power supply.

c) If in any doubt about the correct phasing of the signalling supplies contact the relevant Signalling Engineer.

2.2 Locations with Backup Supply

a) When the polarity of a normal supply is likely to be altered by work, the phasing is to be checked against the emergency supply before work commences and checked again when work is complete.

b) If it was not possible to check the phasing before the work commenced when a normal supply was worked on (eg a transformer failure of a normal supply) it is to be phase checked against the emergency and the Signalling Engineer informed so that the a.c. track circuits at the extremities of the area fed from the location can be checked for correct phasing with the track circuits fed from an adjacent power supply. (It is possible that the phase of a Local electricity Distributor backup supply could have been changed at some previous time. Distributors will not guarantee phases will not change, only that phase rotation will not change).

c) If in any doubt about the correct phasing of the signalling supplies contact the Signalling Engineer.

d) When an emergency supply is being commissioned or worked on, it is to be phased out against the normal supply at the completion of the work.