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REVISION : NEW  
DISTRIBUTION : VOLUME 1  
HOLDERS  
PREPARED BY : ANDREW TAYLOR  
AUTHORISED BY : BILLY CHEUNG

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**STANDARDS BULLETIN No : S01-062**

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**SUBJECT: Phase labelling on HV distribution line**

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**Reason:**

There exist some lines in the PowerWater distribution network on which the phasing is not in the standard configuration, which is Red-White-Blue with Red phase closest to the road and Blue phase furthest from the road. This mainly occurs where the phases are transposed.

Another situation where the phasing may change is where the line crosses the road, effectively reversing the phase sequence without giving any of the advantages of transposing the line.

Presently PWC does not have a standard for when labelling these transposed sections of lines is required, which leads to uncertainty and confusion with the field staff.

To avoid such confusion in the future, the following requirements are to be introduced where ever the phases are not of the standard sequencing, I.E. not Red-White-Blue with Red to road.

**Requirements for new constructions:**

Labelling of all transposed lines clearly as Red, White and Blue phase. The label is to be placed on every pole in the section that does not have the standard phasing of Red to road, regardless of the change in phasing being due to the line being transposed or if the line has crossed a road. All labels are to be placed on the source side of the pole structure. Refer to clause 6 for situations where the labelling frequency is reduced. The placing of the label shall be as per standard drawing number S02-1-8-13. Where labels are to be attached to fibreglass cross arms, an suitable epoxy adhesive (such as Spabond 340 made by Gurit) is to be used.

**Requirements for existing constructions:**

Labelling of all transposed lines clearly as Red, White and Blue phase. The label is to be placed on every pole in the section that does not have the standard phasing of Red to road. Refer to clause 6 for situations where the labelling frequency is reduced. As access to the cross arm is restricted while the line is energized, the same labels as shown in drawing S02-1-8-13 are to be used, however the labels are to be power fastened to the pole between the anti-climbing plate and the ground level plate on the source side of the pole. The labels are to be arranged as to accurately represent the geometry of the phasing overhead without having any part of the phase labels protruding beyond the pole.

## **General requirements**

- 1 If the line is transposed on a pole then both sides of the pole need to be labelled, if the transposition is done over several spans then the poles on either sides of the "roll" need to be labelled.
- 2 Clause 1 does not apply to a transposition that is used to correct a phasing rotation (such as a road crossing) as long as: A) The transposition occurs on the pole immediately after the span where the phasing is rotated, and B) The poles before and after the phasing rotation are visible from the transposition pole.
- 3 Lines that are built in the median strip between dual carriageway roads shall have the phasing labelled on every pole.
- 4 Labels shall be made to standard as shown in drawing number S02-1-8-13.
- 5 The information about the transposed line shall be included and distributed within the working folder for the field staff. This information is to include the location of all poles involved in transposition or phase rotation, the poles that need to be labelled and the arrangement of the labels on the cross arm or pole. This information is the responsibility of the project designer. For lines that are designed after the release date of this bulletin, the required information is to be included in the project design drawings and the as constructed drawings.
- 6 Labelling of phasing that is non-standard is only required on the first pole and then every tenth pole after for the following situations:
  - Lines following non-gazetted roads or only accessible from maintenance tracks.
  - Lines that cross crown land or private property.
  - Sections of line that do not have any transformers or spur lines attached to it for more than 1km.

## **Implementation:**

This amendment is applicable immediately to all HV distribution lines that have drawing approval after the issue date of this bulletin. The labelling of all existing lines shall be conducted by PowerWater Asset Management on an as required basis with consideration of the actual risk and the location and length of the line, in some cases only sections of a line may be retrofitted with phase markers.