

# KARNATAKA POWER TRANSMISSION CORPORATION LIMITED

No. KPTCL/B28/8651/2009-10  
Encl : 2 Sheets ( 4 Pages)



Corporate Office,  
Kaveri Bhavan,  
Bangalore - 560 009.  
Dated: 20.02.2013

## CIRCULAR

**Sub:-** Providing 2 phase supply to the distribution transformers from the KPTCL stations by keeping the 3<sup>rd</sup> phase open, i.e. Operation of 11 kv feeders supplying power to IP sets in Open Delta mode.

**Ref:-** 1. This office Circular No. KPTCL/B28/8651/2009-10 dated 30.10.2009.  
2. Letter No.CEE(P&C)/SET/EET/AEE-5/KCO-103/37540/11-12 dated 29.02.2012

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The ESCOMs are facing several constraints in supplying power in rural areas and they have approached KPTCL to discuss on measures that could be taken to restrict/eliminate unauthorized consumption by IP sets during the time when rostering of power is done on feeders supplying power to IP sets. This issue had come up during 2009 also and based on the discussions in a workshop conducted in this regard by BESCO, KPTCL had issued a circular in October 2009 and again in February 2012.

Recently, BESCO had again raised the above issue and in a meeting held at BESCO chaired by Managing Director, BESCO in which Director Transmission, KPTCL and other Senior Officers of BESCO participated, it was decided that Open delta system of 11 kv lines should be done so as to restrict the energy consumption during peak hours as this will ensure adequate power supply is available during the examination period to provide adequate power supply to villages and small towns in rural areas. In the meeting circulars issued by KPTCL in October 2009 and February 2012 were also discussed in detail and it was agreed by BESCO to implement the suggestions contained in circular dated 30.10.2009 and to have Open delta operation of 11 kv feeders during when rostering is done.

During MMR meeting held on 16.02.2013, Managing Directors of all ESCOMs also desired that during single phase hours of power supply, open delta operation should be done in their ESCOMs also. Managing Directors of all ESCOMs also agreed to give wide publicity through pamphlets etc., explaining the necessity of operating the feeders in open delta mode instead of rostering the feeders while supplying power to predominantly IP set feeders during the hours when these feeders were subject to rostering so as to avoid discontentment from the public.



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**KARNATAKA POWER TRANSMISSION CORPORATION LIMITED**

No.KPTCL/B28/8651/2009-10



**Corporate Office,  
Kaveri Bhavan,  
Bangalore - 560 001.  
Date: 30-10-2009.**

**CIRCULAR**

**Subject: Providing 2 phase supply to the distribution transformers from the station by keeping the 3<sup>rd</sup> phase open.**

**Reference: Letter No. BESCO/GM/PP/BC-47/F-3247/  
08-09/ Cys 17 dated 19<sup>th</sup> September 2009  
of DT BESCO.**

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Despite rostering of IP feeders, the consumption has not reduced. It is therefore proposed to arrange power supply by closing only 2 phases and keeping the third phase open.

The matter has been examined and the following measures have to be taken and reported by Chief Engineers Electy., O&M Zones to the Zonal Chief Engineers Electy., of KPTCL before power supply to only 2 phases on 11 KV side is provided instead of the present method of rostering of feeders:

The guidelines for the operations are:

- a) Ensure proper grounding of all distribution transformers connected to the feeders. The ground resistance must be less than 5 ohms. The respective Executive Engineers El., of the O&M Divisions shall certify to the concerned Zonal Chief Engineers Electy., that this has been done indicating the names of the transformer centres also. The list should be countersigned by the Superintending Engineer El., O&M Circle.
- b) The Executive Engineer El., of the O&M Division shall ensure equitably balancing of loads on phases on which 2 phase power supply is proposed to be distributed so that the sum of the loads on all the feeders in the sub-station is almost equal resulting in minimum flow of current in the neutral of the power transformers. The Zonal Chief Engineers Electy., KPTCL shall ensure that the loads are balanced before granting approval for 2 phase power supply in these stations.

- c) The Executive Engineers Elecl., of the O&M Divisions shall ensure that there is no bridging of the phase which is kept open with any of the other two phases anywhere in the downstream of the lines from the Station since when the 3 phase supply is restored, the power transformer is likely to fail. If any such instances comes to the notice of the Executive Engineer El., TL&SS incharge of a particular station, he/she shall report the matter immediately to the concerned Zonal Chief Engineers Electy., KPTCL and the facility of giving power supply on 2 phase shall be withdrawn immediately.

It is essential that the above directions are followed scrupulously without any compromise, since it is important that all safety norms are followed to prevent any electrical accidents. The Executive Engineers El., TL&SS shall maintain a register for monitoring 2 phase operations which will be jointly certified by Executive Engineer El., O&M and the Executive Engineer El., TL&SS and countersigned by the Superintending Engineer El., O&M Circle. The Superintending Engineer El., O&M Circle of ESCOM is fully responsible for ensuring that there are no procedural lapses in implementing this system.

It is the responsibility of the O&M staff to ensure that all safety precautions as indicated above are taken and no untoward events take place.

B. Sela<sub>30.10.09</sub>  
Deputy General Manager (Technical)  
KPTCL, Bangalore.

**Copy to:**

1. All Chief Engineers, Electy., Transmission Zones, KPTCL.
2. All Chief Engineers, Electy., O&M Zones, ESCOMs.
3. All Superintending Engineers, Elecl., KPTCL/ESCOMs.
4. All Executive Engineers, Elecl., KPTCL/ESCOMs.
5. Executive Assistant to Managing Director, KPTCL.
6. Executive Assistant to Director (Transmission), KPTCL.
7. Technical Assistant to Director (Finance), KPTCL.
8. PS to Managing Directors of ESCOMs/PCKL.
9. PS to Directors (Technical) of ESCOMs.
10. MF.

# ಕರ್ನಾಟಕ ವಿದ್ಯುತ್ ಪ್ರಸಾರಣ ನಿಗಮ ನಿಯಮಿತ

## KARNATAKA POWER TRANSMISSION CORPORATION LIMITED

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OFFICE OF THE  
Chief Engineer, Elec., (P&C),  
Kaveri Bhavan, P.B No. 9990  
Bangalore- 560 009.

No. CEE(P&C)/SET/EET/AEE-5/KCO-103/37540/11-12

Date: / /2012

The Chief General Manager (Elec),  
Operations, Corporate Office, BESCOM,  
K.R. Circle, Bangalore-1.

29 FEB 2012

Sir,

Sub: Implementing Open Delta system for rural feeders by keeping the 3<sup>rd</sup> phase open for providing 2-phase supply to the distribution transformers from the stations.

Ref: 1. Circular No. KPTCL/B28/8651/2009-10, dt. 30-10-2009.  
2. Yr. Ltr. No. BESCOM/CGM(O)/GM(O)/BC-15/F-1848/11-12/4600  
dt. 04-01-2012.

Implementation of Open Delta system for rural feeders can be made with the existing 11kV roaster GOS provided in all the rural 66-110/11kV stations. Sketch showing the operation of the roster GOS is herewith enclosed for reference.

Open-delta i.e. opening of one phase can be achieved by keeping the moving contact of the roaster switch open as illustrated in operation-3. This arrangement can be made to all the feeders connected to the station. In this operation only one phase of all out going feeder can be opened at the station. To ensure balancing of the load on the power transformer, it is necessary to make transposition of the phases at the next immediate double pole structure (next to station) after detailed study of load on each phase of the feeder by changing over the lighting loads on to the live phases.

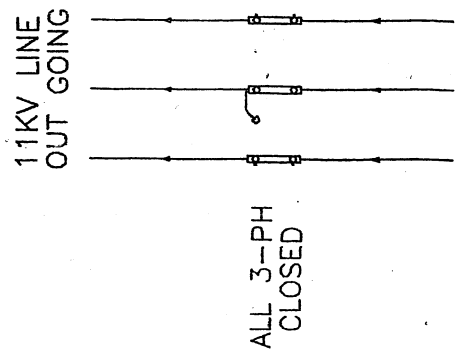
In this connection, the corporate office circular dated 30-10-2009 is very clear which stipulates the action to be taken by O&M field officers for achieving this scheme. You are therefore requested to instruct all O&M officers of BESCOM to implement these instructions and to intimate the local officers of KPTCL for further action at their end. Action taken in this regard may please be intimated to this office for taking any further action in the matter.

Yours faithfully

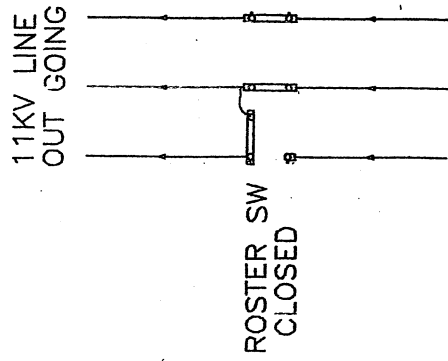
Chief Engineer, Elec.,  
(Planning & Co-Ordination)  
KPTCL, Bangalore.

Copy to EA to DT for placing the matter to the kind notice of the Director (Transmission)

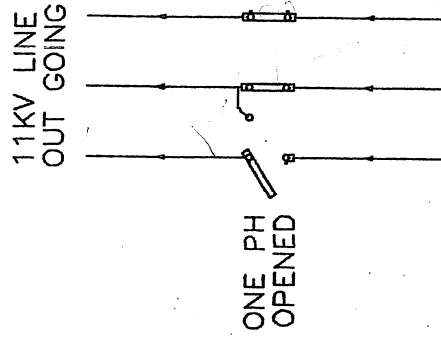
SKETCH INDICATING OPERATION OF ISOLATOR FOR OPEN DELTA OPERATION



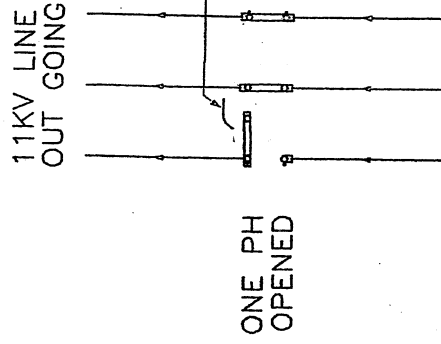
OPERATION-1



OPERATION-2



OPERATION-3



OPERATION-4

LINK BETWEEN Y-PH & ROSTERING  
INSULATOR SHALL BE REMOVED AFTER  
DESIGNED STUDY