



भारत सरकार  
Government of India  
विद्युत मंत्रालय  
Ministry of Power  
केन्द्रीय विद्युत प्राधिकरण  
Central Electricity Authority  
पावर कम्युनिकेशन डवलपमेंट प्रभाग  
Power Communication Development Division

No.:CEA/PCD/PTCC/KNK-910/514-16

Date:18.04.2019

DET (PTCC),  
QA & Inspection (T&D) Circle, BSNL  
1 Floor, Raj Bhavan Exchange,  
No. 26, Sardar Patel Road,  
Guindy, Chennai – 600032

**Subject:** Induced Voltage Calculation in respect of PTCC proposal for 220 kV DC line on MC towers from existing 220/66 kV SS at Devanahalli Hardware Park to proposed 400/220 kV SS at Devanahalli Hardware Park

**Reference:** (i) BSNL letter no. SR-PTCC/SKT-2243/04 dated 27.11.2018  
(ii) South Western Railway letter no. SG/SWR/PTCC/F-2795/1805 dated 11.12.2018  
(iii) Defense letter no. B/46937/Sigs 7(b)/1329 dated 31.01.2019

Sir,

The instant PTCC proposal has been examined. Low frequency induction on telecom cables of BSNL and Block & Telecom circuits of South Western Railway with respect to details furnished vide above references has been computed. The Soil Resistivity (SR) value has been taken as 30,000 Ohm-cm. The voltages likely to be induced on paralleling telecom cables of BSNL and Block & Telecom circuits of South Western Railway under Single Line to Ground fault condition have been computed and are enclosed as Annex – I & II respectively. The screening factors, as applicable, have been considered. Vide ref. (iii) above, Defense Authority have issued No Objection Certificate (NOC) (enclosed as Annex – III). Taking above into consideration, kindly take necessary action for PTCC route approval.

**Encl.:** As above

  
(Naresh Bhandari)  
Chief Engineer

**Copy to:**

- 1) PCSTE, South Western Railway, Office of the Principal Chief Signal & Telecom Engineer, 1st Floor, West Block, Rail Soudha, Gadag Road, Hubli – 580020 (Annex – II only)
- 2) Chief Engineer Electricity, KPTCL, State Load Despatch Centre, No. 28, R.C. Cross Road, Bengaluru - 560009

M/C

CFA Case No.: KNK-910


Case No:SKT-2243		SSA:BGTD			
Name of the power line		Proposed 220KV DC line on MC towers from existing 220/66 KV SS at Devanahalli Hardware Park to the proposed 400/220 KV SS at Devanahalli Hard ware Park in Devanahalli, Devanahalli Taluk,Bengaluru Rural District.			
Length:	3.868 Kms	Map	Scale :	1cm = 500mts	
SR Value : 30,000 $\Omega$ -cm		Type of BSNL Cable: PIUF cable			
Sl.No.	Name of Telecom line	LOP in KMs	MC in Ohms	FC in Amps	IV in Volts
I	(BG) BAGALUR Exge UG cables				
1	Exge to Maralakunte(BG-BG1)	}	IV	LESS	THAN
2	Exge to Chokkanahalli(BG-BG2)				
3	Exge to Mitganahalli(BG-BG3)				
4	Exge to Rasakpalya(BG-BG4)				
5	Exge to Kadayarapanahalli(BG-BG5)				
II	(CKJ) CHIKKAJALA Exge UG cables				
1	Exge to V.N.Cross to Bikamaranahalli(CKJ-CK'-CK1)	}	IV	LESS	THAN
2	Exge to V.N.Cross to Bettahalasuru(CKJ-CK'-CK2)				
3	Exge to V.N.Cross to Hunasmaranahalli(CKJ-CK'-CK3)				
4	Exge to Bainahally(CKJ-CK4)	}	OUT	OF	PARALLELISM
5	Exge to Sadahalli to Nagamangala(CKJ-CK5)				
6	Exge to Tarabanahalli(CKJ-CK6)	}	IV	LESS	THAN
7	Exge to Misiganahalli(CKJ-CK7)				
8	Exge to Doddajala(CKJ-CK8)				
III	(MD) MANDUR Exge UG cables				
1	Exge to Samethanahalli(MD-MD1)				
2	Exge to Kodigehalli(MD-MD2)	}	OUT	OF	PARALLELISM
3	Exge to Kottugollahalli(MD-MD3)				
IV	(BD) BUDIGERE Exge UG cables				
1	Exge to Hittarhalli(BD-BD1)				
2	Exge to Manchoppahalli(BD-BD2)				
3	Exge to Chavdhppanahalli(BD-BD3)				

नरेश भंडारी / NARESH BHANDARI  
 मुख्य अभियन्ता / Chief Engineer  
 केन्द्रीय विद्युत प्राधिकरण / C.E.A.  
 विद्युत मंत्रालय / Ministry of Power  
 भारत सरकार / Govt. of India  
 नई दिल्ली / New Delhi-66

## ANNEXURE – II

<b>Case No.:</b> KNK-910					
<b>Name of the Power line:</b> 220 kV DC line on MC towers from existing 220/66 kV SS at Devanahalli Hardware Park to proposed 400/220 kV SS at Devanahalli Hardware Park		<b>Map Scale</b> : 1cm=500mts <b>Total Length</b> : 3.868 km <b>Soil Resistivity</b> : 30,000 Ohm-cm			
S.No.	Telecom. Details	Length of Parallelism in Km.	Mutual Coupling in Ohms.	Effective Fault current in Amps.	I.V in Volts.

<b>South Western Railway</b> letter no. SG/SWR/PTCC/F-2795/1805 dated 11.12.2018					
1	Channasandra (CSDR) – Yelahanka (YNK)	OUTSIDE IV CALCULATION			0
2	Yelahanka (YNK) – Devanahalli (DHL)	CONSIDERATION ZONE			0

  
 नरेश भंडारी / NARESH BHANDARI  
 मुख्य अभियन्ता / Chief Engineer  
 केन्द्रीय विद्युत प्राधिकरण / C.E.A.  
 विद्युत मंत्रालय / Ministry of Power  
 भारत सरकार / Govt. of India  
 नई दिल्ली / New Delhi-66

Tele : 23019746

Annexure - III  
Directorate General of Signals  
Signals - 7  
General Staff Branch  
Integrated HQ of MoD, (Army)  
DHQ PO, New Delhi - 110011

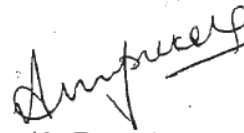
B/46937/Sigs 7(b)/1329

9/Jan 2019

Karnataka Power Transmission Corporation Limited  
Office of the Chief Engineer Electricity,  
State Load Despatch Centre,  
# 28, R.C. Cross Road,  
Bengaluru - 560 009


**PROPOSED 220KV DC LINE ON MC TOWERS FROM EXISTING 220/66KV SS AT  
DEVANAHALLI HARD WARE PARK TO THE PROPOSED 400/220KV SS AT DEVANAHALLI  
HARD WARE PARK IN DEVANAHALLI, DEVANAHALLI TALUK, BENGALURU RURAL  
DISTRICT**

1. Ref your letter No CEE/SLDC/ PTCC/F-2795/-12268-75 dt 25 Oct 2018 (copy att).
2. No Objection Certificate (NOC) is accorded based on inputs provided vide Map sheets received under your letter mentioned above.
3. Documents alongwith map sheets (in original) are returned herewith for your further necessary action.

  
(A Rawat)  
Maj  
GSO 1 (Comn)  
for SO-in-C

Enclosures : (As above)

Copy to:

✓ The Director (PTCC), CEA   
Power Communication Development Division  
NRPC Complex, 18-A. Shaheed Jeet Singh Marg  
Katwaria Sarai, New Delhi - 110016

for information.