



भारत सरकार

Government of India

विद्युत मंत्रालय

Ministry of Power

केन्द्रीय विद्युत प्राधिकरण

Central Electricity Authority

पावर कम्युनिकेशन डेवलपमेंट प्रभाग

Power Communication Development Division

No.:CEA/PCD/PTCC/KNK-903/199-201

Date:15.02.2019

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 from proposed 400/220 kV SS at Jagalur (Hiremallanahole) to existing 220/66 kV SS at Thallak in Chitradurga District

**Reference:** (i) BSNL letter no. SR-PTCC/SKT-2141/08 dated 27.11.2018  
(ii) South Western Railway letter no. SG/SWR/PTCC/F-2765/1773 dated 12.07.2018  
(iii) Defense letter no. B/46937/Sigs 7(b)/1181 dated 14.09.2018

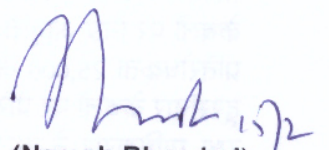
Sir,

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 Average Soil Resistivity (SR) value has been taken as 25,000 Ohm-cm, as intimated by the Power Authority (KPTCL). 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

o/c

  
(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 Centre, Centre, No. 28, R.C. Cross Road, Bengaluru - 560009

## ANNEXURE – I

Case No.: KNK-903					
Name of the Power line: 220 kV DC line from proposed 400/220 kV SS at Jagalur (Hiremallanahole) to existing 220/66 kV SS at Thallak in Chitradurga District		Map Scale : 1cm=500mts Total Length : 27.476 km Average S.R. : 25,000 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>BSNL</b> letter no. – SR-PTCC/SKT-2141/08 dated 27.11.2018					
<b>I (A) NERALAGUNTE Exge UG cables</b>					
1	Exge to Sheep Breeding farm (A-A1)				
2	Exge to Khudapura (A-A2)				
3	Exge to Karthikeyanahatty (A-A3)				
4	Exge to Varavu (A-A4)				
5	Exge to Katavvanahally (A-A5)				
IV LESS THAN 430 V					
<b>II (B) TALLAK Exge UG cables</b>					
1	Exge to Venkannachar Badavane (B-B1)				
2	Exge to Hosahalli (B-B2)	0.65	0.0454	10000	454
3	Exge to Mannekote (B-B3)				
4	Exge to Junction Point Bx (B-Bx)*	0.9	0.0235	10000	235
5	Junction Point Bx to Kodihally (Bx-B4)	1.0	0.0132	10000	132
6	Exge to Giryammanahalli (B-B5)				
7	Junction Point Bx to Kereyagalalahally (Bx-B6)	1.6	0.0339	10000	339
8	Exge to Thimmanahally (B-B7)				
OUT OF PARALLELISM					
<b>III (C) GAJJUGANAHALLI Exge UG cables</b>					
1	Exge to Ramasagara (C-C1)				
2	Exge to Thimmappaiahahally (C-C2)				
3	Exge to Junction Point Cx (C-Cx)*	0.6	0.0365	8000	292
4	Junction Point Cx to Jambaiahahally (Cx-C3)	1.8	0.0794	8000	635
5	Junction Point Cx to N.Devarahally (Cx-C4)	0.7	0.0227	8000	182
6	Exge to Mallurahalli (C-C5)				
7	Junction Point Cx to Giddapura (Cx-C6)	1.6	0.0467	8000	374
IV LESS THAN 430 V					
<b>IV (D) NAYAKANAHATTY Exge UG cables</b>					
1	Exge to N.Mahadevapura (D-D1)				
2	Exge to Manamaihanahatty (D-D2)				
3	Exge to Jaganarahatty (D-D3)				
4	Exge to Gowripura (D-D4)				
IV LESS THAN 430 V					
<b>V (a) KAMANDALAGUNDI Exge UG cables</b>					
1	Exge to Dibbadahalli Cross (a-a1)				
2	Exge to CM hole (a-a2)				
3	Exge to Thaitoni (a-a3)				
4	Exge to Mallapura (a-a4)				
IV LESS THAN 430 V					

**\*Note:**

Junction point of cables B-B4 and B-B6 (Tallak Exchange) is taken as Bx. Junction point of C-C3, C-C4 and C-C6 (Gajjuganahalli Exchange) is taken as Cx.



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

Case No.: KNK-903					
Name of the Power line: 220 kV DC line from proposed 400/220 kV SS at Jagalur (Hiremallanahole) to existing 220/66 kV SS at Thallak in Chitradurga District		Map Scale : 1cm=500mts Total Length : 27.476 km Average S.R. : 25,000 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-2765/1773 dated 12.07.2018					
1	Challakere (CHKE) – Talaku (THKU)	OUT OF PARALLELISM			0
2	Talaku (THKU) – Bommagondanakere (BOMN)	3.1	0.0024	10000	24



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

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

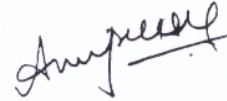
B/46037/Sigs 7(b)/1181/

14 Sep 2018

Chief Engineer (Electricity)  
Karnataka Power Transmission Corporation Ltd  
State Load Despatch Centre,  
# 28, R.C. Cross Road  
Bengaluru - 560009

**PROPOSED 220 KV DC LINE FROM PROPOSED (UNDER CONSTRUCTION) 400 KV  
SS AT JAGALUR (HIEMALLANAHOLE) TO THE EXISTING 220 KV SS AT  
THALLAK IN CHITRADURGA DISTRICT**

1. Ref your letter No CEE/SLDC/PTCC/220 KV/F-2765/3829-37 dt 08 Jun 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.