



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-810 /237-239

Date 25.02.2019

The Divisional Engineer Telecom (PTCC),  
QA & Inspection (T&D) circle, BSNL,  
1<sup>st</sup> floor, Raj Bhavan Exchange,  
No.26, Sardar Patel Road,  
Guindy, Chennai-600032

**Subject:** Induced Voltage Calculation in respect of PTCC proposal for 400kV D/C Madhugiri-Yelahanka Transmission Line

**Ref :** i) BSNL letter no. SR-PTCC/KNK/2784/15 dated 27.04.2015  
ii) South Western Railway letter no. SG/SWR/PTCC/PGCIL/MDGR-YNK/1390 dated 24.02.2016  
iii) Defense letter no. B/46937/Sigs 7(b)/324/ dated 05.09.2016

Sir,

The instant PTCC proposal has been examined. The low frequency induction on telecom cables of BSNL and Block & Telecom Circuits of South Western Railway; with respect to details furnished vide above reference has been computed. The average Soil Resistivity (SR) value has been taken as 10,000 Ohm Cm, as measured during the site visit by CEA and PGCIL officers. The voltages likely to be induced on paralleling telecom cables of BSNL and Block & Telecom circuits of South Western Railway circuits under Single Line to Ground fault condition have been computed and are enclosed at 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 at Annex-III).

Taking above into consideration, kindly take necessary action for PTCC route approval.

**Encl.:** As above

m/e

  
(Naresh Bhandari)  
Chief Engineer

**Copy to:**

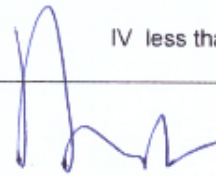
(i)CSTE, South Western Railway, Office of Chief Signal & Telecom Engineer, 1<sup>st</sup> Floor, West Block, New Zonal Office Building, Gadag Road, Hubli- 580020 (with Annexure II only).

(ii) Dy. Manager/TLC, PGCIL, Tumkur CAO, Manjusree, 10<sup>th</sup> Cross, 80 Ft. Rd, Mahalakshmi Nagar, Batawadi, Tumkur-572 103.

## ANNEXURE - I

<b>Case No.:</b> KNK 810 <b>Name of the Power line:</b> 400 kV D/C Madhugiri-Yelahanka Transmission Line		<b>Map Scale</b> : 1cm=500mts <b>Total Length</b> : 74.903 Km. <b>S.R. Value</b> : 10,000 Ohms-cm			
S.No	Telecom. Details	Length of Parallelism in Km.	Mutual Coupling in Ohms.	Effective Fault current in Amps.	I.V in Volts.

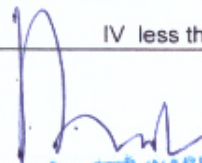
<b>BSNL</b> letter no. SR-PTCC/KNK/2784/15 dated 27.04.2015					
<b>Bangalore (BGTD) Topomap details</b>					
<b>DIA</b>	<b>Doddaballapur INDL Area Exge UG cables</b>				
1	Exge to Kasuvinahalli DIA-DIA 1				
2	Exge to Virapura village DIA-DIA2				
3	Exge to Spinning Mill DIA-DIA3				IV less than 430 V
4	Exge to Bachchahalli DIA-DIA4				
5	Exge to Varadanahalli DIA-DIA5				
<b>RJN</b>	<b>Rajanakunte Exge UG cables</b>				
1	Exge to Marasandra RJN-RJN1				
2	Exge to Yelahanka RJN-RJN2				IV less than 430 V
<b>KL</b>	<b>Kakalu Exge UG cables</b>				
1	Exge to Hessarghatta Rd. KL-KL1				IV less than 430 V
2	Exge to Shandbhaganahalli KL-KL2				
<b>HGH</b>	<b>Hessarghatta Exge UG cables</b>				
1	Exge to Dhasanahalli HGH-HGH1				
2	Exge to Thirumalapura HGH-HGH2				IV less than 430 V
3	Exge to Shivakote Rd.HGH-HGH 3				
<b>DBV</b>	<b>Dodda Belavangala Exge UG cables</b>				
1	Exge to Madrurannasahalli DBV-DBV 1				
2	Exge to Naranahalli DBV-DBV2				IV less than 430 V
3	Exge to Rampur DBV-DBV3				
4	Exge to Chikabblavangaia DBV-DBV4				
<b>Tumkur SSA topomap details</b>					
<b>A</b>	<b>Nelahal Exge UG cables</b>				
1	Exge to Kempadanahally H-H1				
2	Exge to Majjige Kempanahally H-H2				
3	Exge to Palehatti H-H3				
4	Exge to Mallenahalli H-H4				IV less than 430 V
5	Exge to Haldodderi H-H5				
6	Exge to Thippedasarahalli H-H6				
<b>B</b>	<b>Kora Exge UG cables</b>				
1	Exge to Aralakatte I-I1				
2	Exge to Burudaghatta I -I2				
3	Exge to Bommanahalli I-I3				
4	Exge to Melehalli I-I4				IV less than 430 V



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 - I

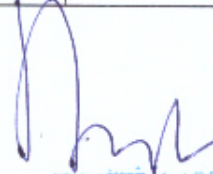
Case No.: KNK 810 Name of the Power line: 400 kV D/C Madhugiri-Yelahanka Transmission Line		Map Scale : 1cm=500mts Total Length : 74.903 Km. S.R. Value : 10,000 Ohms-cm			
S.No	Telecom. Details	Length of Parallelism in Km.	Mutual Coupling in Ohms.	Effective Fault current in Amps.	I.V in Volts.
5	Exge to Kalasegowdana palya I-I5				
6	Exge to Karikere I-I6				IV less than 430 V
7	Exge to towards South I-I7				
<b>C Bellavi Exge UG cables</b>					
1	Exge to Bugudanahalli K-K1				IV less than 430 V
2	Exge to Nagarjunahalli K-K2				
3	Exge to Doddaveeranahalli K-K3				Out of Parallelism
4	Exge to Asalipura K-K4				
5	Exge to T.Gollahalli K-K5				
6	Exge to Chikka Bellavi K-K6				IV less than 430 V
<b>D. Urdigere Exge UG cables</b>					
1	Exge to Hikkal L-L1				
2	Exge to Kodigenahalli L-L2				Out of IV Calculation Consideration Zone
3	Exge to Sathaghatta L-L3				
4	Exge to J N V Gollahalli L-L4				
5	Exge to Bellibatlahalli L-L5				IV less than 430 V
<b>E Seethakal Exge UG cables</b>					
1	Exge to Aregujjanahalli J-J1				
2	Exge to Gopenahalli J-J2				IV less than 430 V
3	Exge to Chikkadoddawadi J-J3				
<b>F Beladhara Exge UG cables</b>					
1	Exge to Gerohalli A-A1				IV less than 430 V
2	Exge to Chikkathotlukere A-A2	3.5	0.0456	12400	565
3	Exge to Jakkenahalli A-A3	2.0	0.0443	12000	532
4	Exge to Amruthagiri A-A4				IV less than 430 V
<b>G Kolala Exge UG cables</b>					
	Exge to Chinnahally B-B1				IV less than 430 V
<b>H IK Colony Exge UG cables</b>					
	Exge to Tammanahally C -C1				IV less than 430 V
<b>I Theetha Exge UG cables</b>					
1	Exge to Goraranahally D-D1				
2	Exge to Lingapura D-D2				IV less than 430 V

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

## ANNEXURE - II

<b>Case No.: KNK 810</b> <b>Name of the Power line: 400 kV D/C Madhugiri-Yelahanka Transmission Line</b>		<b>Map Scale</b> : 1cm=500mts <b>Total Length</b> : 74.903 Km. <b>S.R. Value</b> : 10,000 Ohms-cm			
S.No	Telecom. Details	Length of Parallelism in Km.	Mutual Coupling in Ohms.	Effective Fault current in Amps.	I.V in Volts.

South Western Railway letter no. SG/SWR/PTCC/PGCIL/MDGR-YNK/1390 dated 24.02.2016					
1	Yelahanka (YNK) – Rajankunti (RNN)	1.0	0.0003	14000	4
2	Rajankunti (RNN) – Dodballapur (DBU)	8.1	0.0043	14000	60
3	Dodballapur (DBU) – Oddarahalli (ORH)	Out of Parallelism			0
4	Oddarahalli (ORH) – Makalidurga (MKL)	Out of IV Calculation Consideration Zone			0
5	Makalidurga (MKL) – Thondebhavi (TDV)				0



११११ भंडारी / NARESH BHANDARI  
 मुख्य अभियंता / Chief Engineer  
 केन्द्रीय विद्युत प्राधिकरण / C.E.A.  
 विद्युत विभाग / Ministry of Power  
 भारत सरकार / Govt. of India  
 नई दिल्ली / New Delhi-66

Tele : 23019746

*Annex III*  
knb-810  
Directorate General of Signals  
Signals - 7  
General Staff Branch  
Integrated HQ of MoD, (Army)  
DHQ PO, New Delhi - 110011

B/46937/Sigs 7(b)/324/

05 Sep 2016

Asst General Manager  
Power Grid Corporation of India Ltd  
765/400/220kv Substation,  
Vasanta Narasapura Industrial Area Stage -3,  
Kempanadodderi (Village)  
Thovinakere - Sub Post Office Kora Hobli,  
Tumkur (TQ & DT). Karnataka - 572138

**PTCC CLEARANCE FOR 400KV D/C (QUAD) MADHUGIRI – YELAHANKA  
TRANSMISSION LINE ASSOCIATED WITH SRSS - XIII**

1. Ref your letter No SRTS – II/TMK/400KV TLC/PTCC/16/377 dated 25 Jul 2016.
2. NOC (No Objection Certificate) is accorded based on inputs provided vide Map sheets received under your above mentioned letter.
3. Documents alongwith Map Sheets in original are returned herewith.

*Shraw*  
(BS Kunwar)  
Lt Col  
GSO 1 (Comn)  
for SO-in-C

**Enclosures** : (As above)

**Copy to :-**

✓ The Director (PCD), PTCC,  
Central Electricity Authority,  
LD & T Division, NREB Building  
18A – Saheed Jeet Singh Marg  
New Delhi – 110016

- for information please.

