



सत्यमेव जयते

भारत सरकार
Government of India
विद्युत मंत्रालय
Ministry of Power
केन्द्रीय विद्युत प्राधिकरण
Central Electricity Authority
विद्युत प्रणाली संचार विकास प्रभाग
Power System Communication Development



CEA Case No.: KNK-1024		
Induced Voltage (IV) calculation for PTCC proposal for 220 kV DC line (partially OH and partially UG) on DC/MC/MCMV towers from 220/110 kV MK Hubli SS to 220/110 kV Mache SS (partially on existing 110 kV Kitturu - Belagavi SC line corridor and 220 kV Narendra - Belagavi DC line corridor) (OH=36.031 km, UG=0.503 km) (Length: 39.534 km)		
S.No.	Reference	Dated
(i)	KPTCL: CEE/SLDC/PTCC/F3495/7436-45	08.12.2022
(ii)	KPTCL: Email EMD parameters	20.02.2026
(iii)	BSNL: SR-PTCC/SKT-4667/5	09.02.2026
(iv)	South Western Railway: SG/SWR/PTCC/F-3495/2465	25.01.2023
(v)	Defense: B/46937/Sigs 7(b)/3165	15.02.2023

The PTCC proposal submitted vide above reference(s) (i) and (ii) has been examined. The low frequency induction on Telecom circuits of BSNL and Block & Telecom circuits of South Western Railway with respect to details furnished vide above references (iii) and (iv) has been computed. The voltage likely to be induced on paralleling Telecom circuits of BSNL and Block & Telecom circuits of South Western Railway under Single Line to Ground fault condition are enclosed at Annexure-I and Annexure -II respectively. The screening factors as applicable have been considered.

ADG (Telecommunications) has issued No Objection Certificate (NOC) vide reference (v) above (attached as Annexure –III).

EPR Zones for proposed substations are mentioned below.

Name of the proposed SS	Half Diagonal Distance, D/2 (mts)	Fault Current, I (kA)	Resistance of earthmat, R (Ohms)	d (mts) at 430 V	d (mts) at 650 V	d (mts) at 7 kV	d (mts) at 10 kV
220/110/33/11 kV Mache SS	148.5	32.5	0.38	4117	2673	113	35

As per the details submitted by BSNL vide reference (iii) above, no telephone exchanges are falling in the EPR zone of the proposed substation.

Taking above into consideration, necessary action for issuance of PTCC route approval (RAC) shall be taken under intimation to this office in the stipulated period as specified in PTCC Manual and subsequent CLPTCC meetings.

As per the decision taken in 111th and 112th CLPTCC meeting, necessary instructions for “*Deemed Energization approval*” shall be specified while issuing RAC
Encl.: As above

Chief Engineer

To,

1.	Divisional Engineer (PTCC), Southern Zone	BSNL, Inspection Circle, 2nd Floor, Sanchar Complex, WMS Compound, Jayanagar 5th Block, 9th Main, 47th Cross, Bangalore-560041	
2.	PCSTE (South Western Railway)	Principal Chief Signal & Telecom Engineer, Rail Soudha, Gadag Road, Hubballi-580020	
3.	Member (Power), KPTCL	Chief Engineer Electricity, SLDC #28, Race Course Road, Bengaluru-560009	Copy for information

ANNEXURE-I

CEA Case No.: KNK-1024					
Name of the Power line: 220 kV DC line (partially OH and partially UG) on DC/MC/MCMV towers from 220/110 kV MK Hubli SS to 220/110 kV Mache SS (partially on existing 110 kV Kitturu - Belagavi SC line corridor and 220 kV Narendra - Belagavi DC line corridor) (OH=36.031 km, UG=0.503 km)		Map Scale : 1 cm= 500 m Total Length: 39.534 km S.R. Value: 20000 Ohm-cm			
S.No.	Telecom. Details	Length of Parallelism in Km.	Mutual Coupling in Ohms.	Effective Fault current in Amps.	I.V in Volts.

BSNL Letter No: SR-PTCC/SKT-4667/5 **Dated:** 09.02.2026

BSNL Main EXCHANGE (F-3509)

E-EN1	Main Exchange to Channamma Circle	IV less than 430 V			
E-EN2	Main Exchange to Channamma Circle				
E-EN3	Main Exchange to Channamma Circle				
E-ES1	Main Exchange to Vaccine Depo				
E-ES2	Main Exchange to Vaccine Depo				
E-ES3	Main Exchange to Vaccine Depo				

Macche Exchange – P – (F-3509)

P-P1	Macche Exchange to P1	1.75	0.0064	25911	166
P-P2	Macche Exchange to P2	IV less than 430 V			
P-P3	Macche Exchange to P3				
P-P4	Macche Exchange to P4				

ANNEXURE-II

CEA Case No.: KNK-1024					
Name of the Power line: 220 kV DC line (partially OH and partially UG) on DC/MC/MCMV towers from 220/110 kV MK Hubli SS to 220/110 kV Mache SS (partially on existing 110 kV Kitturu - Belagavi SC line corridor and 220 kV Narendra - Belagavi DC line corridor) (OH=36.031 km, UG=0.503 km)		Map Scale : 1 cm= 500 m Total Length: 39.534 km S.R. Value :20000 Ohm-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/F-3495/2465 Dated: 25.01.2023					
1.	KNP-DUR	0.15	0.000042	26478	1
2.	DUR-BGM	8.3	0.0112	20391	228
3.	BGM-SXB	1.2	0.00024	18652	4
4.	SXB-SBH	Outside IV consideration zone			

KNK-1024

Tele : 23019746

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

B/46937/Sigs 7(b)/3165

15 Feb 2023

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

PTCC PROPOSAL FOR CONSTRUCTION OF 220KV DC LINE (PARTIALLY OH LINE & UG CABLE) ON DC/MC/MCMV TOWERS FROM EXISTING 220/110KV MK HUBLI SS IN KITTUR TALUK TO PROPOSED 220/110KV (UPGRADATION OF 110/11KV SS) MACHE SS (PARTIALLY ON EXISTING 110KV KITTURU-BELAGAVI SC LINE CORRIDOR (FROM T. NO 221 TO 268) & 220KV NARENDRA-BELAGAVI DC LINE CORRIDOR (FROM T.NO 226 TO T.NO 251) & FROM T.NO 251 TO MACHE SS DC LINE ON MC TOWERS ON PROPOSED CORRIDOR) IN BELAGAVI TALUK, BELAGAVI DISTRICT

1. Refer your letter No CEE/SLDC/PTCC/F-3495/-7436-45 dt 08 Dec 2022 (copy att).
2. **No Objection Certificate (NOC) is accorded** based on inputs provided as per Map sheets received vide your letter mentioned above.
3. Documents alongwith map sheets (in original) are returned herewith for your further necessary action.

(SK Sharma)

Lt Col
GSO 1 (Comn)
for Offg ADG T

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

The DET(PTCC), Northern Zone
Bharat Sanchar Nigam Limited
O/o PGM (North), QA & Inspection Circle,
D-Tax Building, Eastern Court, Janpath
New Delhi-110001

A-D
UYK