



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-1051		
Induced Voltage (IV) calculation in respect of PTCC proposal for 220kV S/C U.G. cable from 220/66/11kV Nagarabhavi SS to 220/66/11kV Banashankari SS(5.374 km)- regd.		
S. No	Reference No.	Dated
(i)	KPTCL: CEE/SLDC/PTCC/F-3644/5262-80	21.09.2023
(ii)	BSNL: SR-PTCC/SKT 5922/02	21.06.2024
(iii)	South Western Railway: SG/SWR/PTCC/F-3644/2604	19.12.2023
(iv)	Defense: B/46937/Sigs 7(b)/3544	22.11.2023

The PTCC proposal submitted vide reference (i) has been examined. The LF induction on Block and Telecom circuits of BSNL and South Western Railway with respect to details furnished vide above reference (ii) and (iii) respectively has been computed. The voltage likely to be induced on paralleling Block and Telecom circuits of BSNL and 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.

DG Signals, MoD has issued No Objection Certificate (NOC) vide reference (iv) (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 (k A)	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
220/66/11kV Nagarabhavi SS	143.55	28	0.09	698	413	NA	NA
220/66/11kV Banashankari SS	80.62	28	0.44	2229	1447	61	19

As per the details submitted by BSNL vide reference (ii) 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 may be taken under intimation to this office.

Encl.: As above

Chief Engineer,

To,

1.	Divisional Engineer (PTCC), Southern Zone	BSNL, Inspection Circle, 2 nd Floor, Sanchar Complex, WMS Compound, Jayanagar 5 th Block, 9 th Main, 47 th Cross, Bangalore-560041	
2.	PCSTE/SWR	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-1051			Map Scale : 1 cm= 500 m		
Name of the Power line: 220kV S/C U.G. cable from 220/66/11kV Nagarabhavi SS to 220/66/11kV Banashankari SS			Total Length : 5.374 km		
			S.R. Value : 25000 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 5922/02 **Dated** 21.06.2024

CHANDRA LAYOUT TE(C)

C-C1	CHANDRA LAYOUT TE TO JYOTHINAGAR	IV less than 430V			
C-C2	CHANDRA LAYOUT TE TO GARDEN VILLAS				
C-C3	CHANDRA LAYOUT TE TO NAGARBHAVI CIRCLE				
C-C4	CHANDRA LAYOUT TE TO MANSA NAGAR				
C-C5	CHANDRA LAYOUT TE TO NGEF L/O				
C-C6	CHANDRA LAYOUT TE TO CANARA BANK COLONY				
C-C7	CHANDRA LAYOUT TE TO BYRAVESHWARA NAGAR	1.4	0.0015	16633	25

NAGARBHAVI TE(N)

N-N1	NAGARBHAVI TE TO MALLATHALLI	IV less than 430V			
N-N2	NAGARBHAVI TE TO GANAJYOTHI NAGAR	0.75	0.0008	16638	13
N-N3	NAGARBHAVI TE TO NAGARBHAVI GUDDA	IV less than 430V			
N-N4	NAGARBHAVI TE TO PAPAREDDYPALYA	0.65	0.006	23832	143
N-N5	NAGARBHAVI TE TO SRIGANDADAKAVALLU	0.8	0.0042	23832	100

ANNEXURE-II

CEA Case No.: KNK-1051		Map Scale : 1 cm= 500 m			
Name of the Power line: 220kV S/C U.G. cable from 220/66/11kV Nagarabhavi SS to 220/66/11kV Banashankari SS		Total Length : 5.374 km			
		S.R. Value : 25000 Ohm-cm			
S.No.	Telecom. Details	Length of Parallelism in Km.	Mutual Coupling in Ohms.	Effective Fault current in Amps.	I.V in Volts.

SWR Letter No: SG/SWR/PTCC/F-3644/2604 Dated 19.12.2023					
1.	KSR Bengaluru - Yesvantpur	Outside IV Consideration zone			
2.	Yesvantpur- Chikka Banawara				
3.	Yesvantpur - Lottegolahalli				
4.	Lottegolahalli - Yelahanka				
5.	Lottegolahalli - Hebbal				
6.	Hebbal - Banaswadi				
7.	KSR Bengaluru – Bengaluru Cantonment RS	Out of Parallelism			
8.	Bengaluru Cantonment – Bengaluru East	Outside IV Consideration zone			
9.	KSR Bengaluru - Nayandahalli	3.05	0.004	13998	56
10.	Nayandahalli - Kengeri	0.7	0.0002	20185	4
11.	Kengeri - Hejjala	Out of Parallelism			

Tele : 23019746

Directorate General of Signals

Signals - 7

General Staff Branch

Integrated HQ of MoD, (Army)

DHQ PO, New Delhi – 110011

KAK-1051

B/46937/Sigs 7(b)/3544

22 Nov 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 PROPOSED 220KV 1200 SQMM SC UG CABLE ROUTE
FROM PROPOSED 220/66/11KV NAGARABHAVI SS (UNDER CONSTRUCTION)
TO PROPOSED 220/66/11KV BANASHANKARI 3RD STAGE GIS SS IN
BENGALURU URBAN DISTRICT**

1. Refer your letter No CEE/SLDC/PTCC/F-3644/-5262-80 dt 21 Sep 2023 (copy att).
2. **No Objection Certificate (NOC) is accorded** based on inputs provided as per Map sheet received vide your letter mentioned above.
3. Documents alongwith map sheets (in original) are returned herewith for your further necessary action.



(SP Choyal)

Lieutenant Colonel

General Staff Officer Grade 1 (Communication)

for Additional Director General (Telecommunication)

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

Central Electricity Authority

PCD Division

File No. 10/0

S/11/23

e.

PPU: 3194
09/01

Sh. Parveen