



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 Division**

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CEA Case No.: KNK-963		
Induced Voltage (IV) calculation in respect of PTCC proposal for 220kV SC UG cable from 220/66kV Sahakaranagar SS to 220/66kV Mattikere SS in Bengaluru (5.916 km)- regd.		
S. No	Reference No.	Dated
(i)	KPTCL: CEE/SLDC/PTCC/F-3161/12897-904	19.02.2021
(ii)	KPTCL: CEE/SLDC/PTCC/F-3161/12905-09	19.02.2021
(iii)	KPTCL: CEE/SLDC/PTCC/F-3161/8608-10	03.03.2025
(iv)	BSNL:SR-PTCC/SKT2959/6	27.02.2025
(v)	Railway: SG/SWR/PTCC/F-3161/2149	28.07.2021
(vi)	Defense: B/46937/Sigs7(b)/2365	06.04.2021

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

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

EPR Zones for proposed substation 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
220/66kV GIS S/S Sahakaranagar	84.4	37.5	0.51	3669	2399	146	77
220/66kV S/S Mattikere	70.18	37.5	0.23	1338	861	16	NA

As per the details submitted by BSNL vide reference (iv) above, Sahakaranagar, Astra Zenika and Coffee Board Layout telephone exchanges are falling in the EPR zone of the proposed 220/66 kV GIS Sahakaranagar 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 Telecom (PTCC), Southern Zone	BSNL, Inspection Circle, 2nd Floor, Sanchar Complex, WMS Compound, Jayanagar 5th Block, 9th Main, 47th Cross ,Bangalore-560041	
2.	PCSTE/SWR	Principal Chief Signal & Telecom Engineer, Rail Soudha, Gadag Road, Hubballi-580020	
2.	Member(Power), KPTCL	Chief Engineer Electricity, SLDC #28, Race Course Road, Bengaluru-560009	Copy for information

**ANNEXURE-I**

<b>CEA Case No.:</b> KNK-963 Name of the Power line: 220kV SC UG cable from 220/66kV Sahakaranagar SS to 220/66kV Mattikere SS			<b>Map Scale</b> : 1 cm= 500 m <b>Total Length</b> : 5.916 km <b>S.R. Value</b> : 25,000 Ohm-cm		
<b>S.No.</b>	<b>Telecom. Details</b>	<b>Length of Parallelism in Km.</b>	<b>Mutual Coupling in Ohms.</b>	<b>Effective Fault current in Amps.</b>	<b>I.V in Volts.</b>

**BSNL Letter No:SR-PTCC/SKT2959/6 Dated 27.02.2025**

<b>SAHAKARANGAR TELECOM EXCHANGE</b>					
1.	SAHAKARANGAR EXG to Bytarayanapura				
2.	SAHAJARANAGAREXG to NH Pillar 72 and				
3.	SAHAJARANAGAREXG to kodigehalli				
4.	SAHAKARANGAR EXG to Bhuvanewari				
5.	SAHAKARANGAR EXG to Dasarahalli				
6.	SAHAKARANGAR EXG to NCBS to L&T				
7.	SAHAKARANGAR EXG to Block,B Block,				
<b>ASTRA ZENIKA TELECOM EXCHANGE</b>					
8.	ASTRA ZENIKA EXG to Vinayaka Layout				
9.	ASTRA ZENIKA EXG to Vayunandan Layout				
10.	ASTRA ZENIKA EXG to Pampa Extension				
<b>CFB TELECOM EXCHANGE</b>					
11.	CFB EXG to Dasarahalli				
12.	CFB EXG to Mariyanapalya				

**ANNEXURE-II**

<b>CEA Case No.:</b> KNK-963 Name of the Power line: 220kV SC UG cable from 220/66kV Sahakaranagar SS to 220/66kV Mattikere SS			<b>Map Scale</b> : 1 cm= 500 m <b>Total Length</b> : 5.916 km <b>S.R. Value</b> : 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.

South Western Railway Letter No: SG/SWR/PTCC/F-3161/2149 Dated 28.07.2021					
1	KSR Bengaluru – Bengaluru Cantonment	1.6	0.00003	13092	0.4
2	Bengaluru Cantonment – Bengaluru East	Out of Parallelism			
3	Bengaluru East – Baiyyappanahalli				
4	Baiyyappanahalli - Banaswadi				
5	Bananwadi - Hebbal	0.4	0.000001	25222	0.3
6	Hebbal - Lotegolahalli	2.47	0.0017	14539	25
7	Baiyyappanahalli – KR Puram	Out of Parallelism			
8	Channasandra – Yelahanka	0.9	0.00016	14890	2
9	KSR Bengaluru - Yesvantpur	0.92	0.0005	18481	9
10	Yesvantpur - Lotegolahalli	0.86	0.0069	21213	146
11	Yesvantpur – Chikabanavara	1.3	0.0026	21372	56
12	Chikabanavara - Golahalli	Out of Parallelism			
13	Lotegolahalli - Yelahanka	4.31	0.0222	14356	319
14	Yelahanka – Rajakunti	Out of Parallelism			
15	Yelahanka - Devanahalli				
16	KSR Bengaluru - Nayanadahalli				
17	Nayanadahalli - Kengeri				

B/46937/Sigs 7(b)/2365

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

KNK-967

06 Apr 2021

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

**PROPOSED 220KV S/C 1200SQMM UG CABLE FROM PROPOSED 220/66KV  
SAHAKARANAGAR GIS TO THE PROPOSED 220/66KV MATHIKERE GIS NEAR  
EXISTING 66/11KV MATHIKERE SUB STATION IN BENGALURU TALUK AND  
DISTRICT**

1. Refer your letter No CEE/SLDC/ PTCC/F-3161/12897-904 dt 19 Feb 2021 (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)  
Lt Col  
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

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

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