



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-949		
Induced Voltage (IV) calculation in respect of PTCC proposal for 220KV DC line from existing 220/66KV Station at Puttenahalli to proposed 220/66KV GIS Station at Sahakaranagar in Bangalore Urban district (10.345 km) - regd.		
S. No	Reference No.	Dated
(i)	KPTCL: CEE/SLDC/PTCC/F-3113/8901-05	12.11.2020
(ii)	KPTCL:SEE/R&D/EEE/KCO-116/F-10(49)/2023-24/4151-55	30.01.2024
(iii)	KPTCL:SEE/R&D/EEE/KCO-116/F-10(43)/2023-24/4173-77	30.01.2024
(iv)	BSNL: SR-PTCC/SKT2843/8	20.10.2023
(v)	South Western Railway: SG/SWR/PTCC/F-3113/2103	17.02.2021
(vi)	Defense: B/46937/Sigs 7(b)/2217	29.12.2020

The PTCC proposal submitted vide reference (i), (ii) and (iii) 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 (iv) & (v) respectively have 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 have issued No Objection Certificate (NOC) vide reference (vi) (enclosed as Annexure III)

EPR details for the proposed substation is given below.

Name of the 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
200/66KV Station at Sahakaranagar, Bengaluru	84.4	37.5	0.51	3669.4	2398.9	146.2	190.15

As per the details submitted by BSNL, no telecom exchanges are lying 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

I/33599/2024

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.	Member (Power) SLPTCC	Chief Engineer Electricity, SLDC #28, Race Course Cross Road, Bengaluru - 560009
3.	GM (S&T)	Principal Chief Signal & Telecom Engineer, Rail Soudha, Gadag Road, Hubballi-580020

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ANNEXURE-I

CEA Case No.: KNK-949		Map Scale : 1 cm= 500 m			
Name of the Power line: 220KV DC line from existing 220/66 kV Station at Puttenahalli to proposed 220/66 kV GIS Station at Sahakarinaragar, Bangalore		Total Length : 10.345 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/SKT2843/8		Date: 20.10.2023			
1	YNK Exchange to A sector, Venkateswara Temple	IV less than 430V			
2	YNK Exchange to Sheshadripuram College				
3	YNK Exchange to A Sector Jamia Masjid				
4	YNK Exchange to A sector Ganesha Temple				
5	YNK Exchange to a Sector Kant Sweet	2.25	0.1172	16795	1967
6	YNK Exchange to New Town Bus Stand	2.6	0.12078	16479	1730
7	YNK Exchange to Sharavathi	1.3	0.02927	21394	626
8	YNK Exchange to BBMP park	1.3	0.02927	20623	604
9	YNK Exchange to B Sector Karnataka bank	1.3	0.04	22738	910
10	YNK Exchange to B Sector, Anjeneya temple	2.25	0.1172	16795	1967
11	YNK Exchange to Atturu Layout	3.5	0.1312	14313	1878
12	YNK Exchange to Mathru Layout	3.65	0.1328	14179	1883
13	YNK Exchange to 8 Cross judicial Layout	IV less than 430V			
14	YNK Exchange to 22 cross B8MP Samudaya bhavana, judicial Layout	1.55	0.0172	25962	447
15	YNK Exchange to Aerdrome Underpass	IV less than 430V			
16	YNK Exchange to Judicial layout				
17	YNK Exchange to Aifalsandra Anganwadi	Out of parallelism			
18	YNK Exchange to Deccan Shelter Apt	IV less than 430V			
19	YNX Exchange Exchange to NES Circle				
20	YNK Exchange to Railway underpass				
21	YNK Exchange to New BBMP Office				
22	YNK Exchange to Old Town Circle Anjaneya statue				

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23	YNK Exchange to 3 rd Main Gandhi Nagar				
24	YNK Exchange to 4 th Main Gandhi Nagar				
25	YNK Exchange to New Prakash Theatre				
26	YNK Exchange to BDKC Chowltry				
27	YNK Exchange to Saurabhi Layout				
28	YNK Exchange to Vasaveedhii				
29	YNK Exchange to BWSSB	3.5	0.1328	14309	1900
30	YNK Exchange to Industrial Area	1.6	0.0469	23670	1112
31	YNK Exchange to RWF Qtrs	1.6	0.04603	22008	1013
32	YNK Exchange to Nagarjuna Apts	2.2	0.0603	22322	1347
33	YNK Exchange to Puttanahalli Village	2	0.0853	19544	1667
34	YNK Exchange to Ananthpura gate	IV less than 430V			
35	YNK Exchange to Beside NCC MEADOWS				
36	YNK Exchange to CRPF Gate				
37	YNK Exchange to Mother Dairy Circle	2.75	0.1121	15886	1781
38	YNK Exchange to 4 Phase Govt School	3.4	0.1182	16432	1942
39	YNK Exchange to 4 Phase BMTS bus Stand	3.6	0.114	16317	1861
40	YNK Exchange to 4 phase Library	3.6	0.1138	16432	1870

MARUTHI NAGAR EXCHANGE (F-3113)

S.No.	Telecom. Details	Length of Parallelism in Km.	Mutual Coupling in Ohms.	Effective Fault current in Amps.	I.V in Volts.
1	Maruthinagar Exge to Kurlappa Layout	IV less than 430V			
2	Maruthinagar Exge to Prakruthi Layout	IV less than 430V			
3	Maruthinagar Exge 1 st Main, 2 nd cross	IV less than 430V			
4	Maruthinagar Exge 3 rd Main, 6 th cross	IV less than 430V			
5	Maruthinagar Exge 1 st Main, 24 th cross	IV less than 430V			

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SHOBA ZERICON EXCHANGE (F-3113)

S.No.	Telecom. Details	Length of Parallelism in Km.	Mutual Coupling in Ohms.	Effective Fault current in Amps.	I.V in Volts.
1	Shoba Zericon to Renaissance Excotica	IV less than 430V			

SHOBA ALTHEA EXCHANGE (F-3113)

S.No.	Telecom. Details	Length of Parallelism in Km.	Mutual Coupling in Ohms.	Effective Fault current in Amps.	I.V in Volts.
1	Shoba Althea to D Block	IV less than 430V			

KENDRIYA VIHAR EXCHANGE (F-3113)

S.No.	Telecom. Details	Length of Parallelism in Km.	Mutual Coupling in Ohms.	Effective Fault current in Amps.	I.V in Volts.
1	Kendriya Vihar to Maruthinagar 1 st Main, 2 nd Cross	IV less than 430V			

HERITAGE EXCHANGE (F-3113)

S.No.	Telecom. Details	Length of Parallelism in Km.	Mutual Coupling in Ohms.	Effective Fault current in Amps.	I.V in Volts.
1	Heritage to 8'' Block	IV less than 430V			

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FRLHT EXCHANGE (F-3113)

S.No.	Telecom. Details	Length of Parallelis m in Km.	Mutual Coupling in Ohms.	Effective Fault current in Amps.	I.V in Volts.
1	FRLHT to IAIM FRLIIT			IV less than 430V	

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ANNEXURE-II

CEA Case No.: KNK-949		Map Scale : 1 cm= 500 m			
Name of the Power line: 220KV DC line from existing 220/66KV Station at Puttenahalli to proposed 220/66KV GIS Station at Sahakaranagar, Bangalore		Total Length : 10.345 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.
South Western Railway Letter No. SG/SWR/PTCC/F-3113/2103 Date: 17.02.2021					
1	KSR Bengaluru – Bengaluru Cantonment	Out of parallelism			
2	Bengaluru Cantonment- Bengaluru East				
3	Bengaluru East - Baiyyappanhalli				
4	Baiyyappanhalli – Bansawadi				
5	Bansawadi - Hebbal	0.9	0.000139	22751	3
6	Hebbal - Lottegolahalli	1.6	0.000306	17966	5.5
7	Baiyyappanhalli – Krishnarajapuram	Outside IV consideration zone			
8	Krishnarajapuram- Whitefield				
9	Baiyyappanhalli - Channasandra				
10	Channasandra – Yelahanka	3.95	0.00234	19356	45
11	Baiyyappanhalli – Karmelaram	Outside IV consideration zone			
12	KSR Bengaluru – Yesvantpur	Out of parallelism			
13	Yesvantpur - Lottegolahalli	0.6	0.00013	0	0
14	Yesvantpur - Chikabanavara	3.3	0.00095	14238	13.5
15	Chikabanavara – Golahalli	Out of parallelism			
16	Lottegolahalli - Yelahanka	4.95	0.0045	16705	75
17	Yelahanka – Rajankunti	3.9	0.0113	23617	268
18	Rajankunti - Dodballapur	Out of parallelism			
19	Yelahanka – Devanahalli	3.9	0.0112	23804	267
20	KSR Bengaluru - Nayanadahalli	Outside IV consideration zone			
21	Nayanadahalli - Kengeri				

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Tel : 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)/2217

29 Dec 2020

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

**PROPOSED 220KV DC LINE ON MC TOWERS FROM EXISTING 220/66KV SS AT
PUTTENAHALLI [D.G. PLANT] TO PROPOSED 220/66KV GIS STATION AT
SAHAKARINAGAR IN BENGALURU URBAN DISTRICT**

1. Refer your letter No CEE/SLDC/ PTCC/H-3113/8901-05 dt 12 Nov 2020 (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.


(Rakesh Kumar)
Lt Col
GSO 1 (Comn)
for SO-in-C

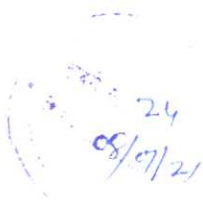
Enclosures : (As above)

Copy to :

✓ The Director (PTCC), CEA
Power Communication Development Division
NRPC Complex, 18-A Shaheed Jeet Singh Marg
Katwaria Sarai, New Delhi - 110016

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

for information


Sl. Tamis
PPS
09.01.21