



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

CEA Case No. : KNK-1173		
Induced Voltage (IV) calculation for PTCC proposal of 220 kV S/C line on D/C towers from 220/66/11 kV Puttenahalli DG Plant Yelahanka SS of KPTCL to 220/25 kV Traction S/s of M/s South Western Railway Bengaluru Yelahanka (Length: 0.6 Kms) - regd.		
S. No	Reference No.	Dated
(i)	CEE/SLDC/PTCC/F-3800/6528-36	09.01.2025
(ii)	CEE/SLDC/PTCC/F-3800/8284-86	21.02.2025
(iii)	BSNL: SR-PTCC/SKT6677/6	28.02.2025
(iv)	South Western Railway: SG/SWR/PTCC/F-3800/2853	05.02.2025

The PTCC proposal submitted vide reference (i) has been examined. The LF induction on communication circuits of BSNL and South Western Railway with respect to details furnished vide above reference (iii) and (iv) 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 and Annexure-II respectively. The screening factors as applicable have been considered.

EPR zone for the proposed substation is mentioned below:

Name of the proposed Substation	Half diagonal distance, D/2 (mts)	Fault Current I (KA)	Resistance of Earth Mat, R (ohms)	d (mts) at 430 V	d (mts) at 650 V	d (mts) at 7kV	d (mts) at 10kV
220/25 kV Traction S/s of M/s South Western Railway Bengaluru Yelahanka	56.59	31.5	0.26	1021	656	10	NA

As per the details submitted by BSNL, No Telephone exchange is falling within the EPR zone of proposed substation

Telecommunication details from DG Signals, MoD are awaited however, vide reference (ii) above, KPTCL have forwarded a letter received from Deputy Chief Electrical Engineer, South Western Railway wherein it has been informed that all construction related activities for the transmission line works are completed and the evacuation could not take place due to want of PTCC approval. So as to charge the subject cited transmission line at the earliest, M/s South Western railway has requested for issuance of provisional PTCC clearance and has given an undertaking that "In case

of any impact on the Telecom assets/ personnel of Defense due to charging of this transmission line, M/s South Western Railway Bengaluru will take all necessary action for its remediation”.

Taking above into consideration, necessary action for issuance of provisional PTCC route approval may be taken under intimation to this office. LF induction on telecommunication circuits of Defense, will be communicated after the receipt of details from DG Signals, MoD.

Chief Engineer

To,

1.	Divisional Engineer (PTCC), Southern Zone	O/o CGM, QA&I circle, 2 nd floor, Sanchar Complex, WMS Compound, Jayanagar, 5 th block, 9 th main, 47 th cross, Bengaluru- 560 041	
2.	GM (S&T)	South Western Railway Headquarter, Rail Soudha, Hubballi – 580 023	
3.	Chief Engineer, Electricity	KPTCL, State Load Despatch Centre, #28, R.C. Cross Road, Bangalore - 560009	Copy for information

ANNEXURE-I

CEA Case No.: KNK-1173			Map Scale : 1 cm= 500 m		
Name of the Power line: 220 kV S/C line on D/C towers from 220/66/11 kV Puttenahalli DG Plant Yelahanka SS of KPTCL to 220/25 kV Traction S/s of M/s South Western Railway Bengaluru			Total Length : 0.6 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: SR-PTCC/SKT6677/6 Date: 28.02.2025					
I	Yelahanka Telephone Exchange				
1	Exchange to Puttenahalli route (A-A1)		IV less than 430 V		
2	Exchange to Sharavathi Bus Stand (A-A2)		IV less than 430 V		
3	Exchange to 80ft road (A-A3)		IV less than 430 V		
4	Exchange to Seshadripuram clg route (A-A4)		IV less than 430 V		
5	Exchange to Kanti sweets chikkabommasandra (A-A5)		IV less than 430 V		
6	Exchange to Industrial area (A-A6)		IV less than 430 V		
7	Exchange to Market route (A-A7)		Out of parallelism		
8	Exchange to Dairy circle (A-A8)		Out of parallelism		
9	Exchange to BWSSB (A-A9)		IV less than 430 V		

ANNEXURE-II

CEA Case No.: KNK-1173			Map Scale : 1 cm= 500 m		
Name of the Power line: 220 kV S/C line on D/C towers from 220/66/11 kV Puttenahalli DG Plant Yelahanka SS of KPTCL to 220/25 kV Traction S/s of M/s South Western Railway Bengaluru			Total Length : 0.6 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: SG/SWR/PTCC/F-3800/2853 Date: 05.02.2025					
1	Yelahanka to Channasandra	Out of parallelism			
2	Yelahanka to Devanahalli	0.6	0.0041	13903	57
3	Yelahanka to Rajankunte	0.6	0.0041	13903	57
4	Rajankunte to Dodballapur	Out of parallelism			
5	Yelahanka to Lottegolahalli	Out of parallelism			
6	Yesvantpur to Lottegolahalli	Out of parallelism			
7	Lottegolahalli to Hebbal	Out of parallelism			
8	Yesvantpur to Chikkabanawa	Out of parallelism			
9	Hebbal to Banaswadi	Out of parallelism			