



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

CEA Case No.: KNK-947		
Induced Voltage (IV) calculation in respect of PTCC proposal for 220 kV S/C Underground Transmission Line from 220 kV Cessna Business Park S/s to 220 kV Hagardu S/s in Bangalore South Taluk. (Length- 11.963 km)- Regd.		
S. No	Reference No.	Dated
(i)	KPTCL: CEE/SLDC/PTCC/F-3101/7365-74	09.10.2020
(ii)	KPTCL: e-Mail	08.07.2025
(iii)	BSNL:SR-PTCC/F-3101/5	19.06.2025
(iv)	South Western Railway: SG/SWR/PTCC/F-3101/2091	26.11.2020
(v)	Defense: B/46937/Sigs7(b)/2182	29.12.2020

The PTCC proposal submitted vide reference (i) & (ii) has been examined. The LF induction on Block and Telecom circuits of BSNL & South Western Railway with respect to details furnished vide above reference (iii) & (iv) has been computed. The voltage likely to be induced on paralleling Block and Telecom circuits of BSNL & South Western Railway under Single Line to Ground fault condition are enclosed at Annexure-I & Annexure-II respectively. The screening factors as applicable have been considered. DG Signals, MoD has issued No Objection Certificate (NOC) vide reference (v).

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
220kV Hagaduru S/s	58	37.5	0.24	1156	745	17	N.A
220 kV Cessna Business Park	67	37.5	0.19	1043	667	1	N.A

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.

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	
3.	Member(Power), KPTCL	Chief Engineer Electricity, SLDC #28, Race Course Road, Bengaluru-560009	Copy for information

ANNEXURE-I

CEA Case No.: KNK-947			Map Scale : 1 cm= 500 m		
Name of the Power line: 220 kV S/C Underground Transmission Line from 220 kV Cessna Business Park S/s to 220 kV Hagaradu S/s in Bangalore South Taluk.			Total Length : 11.963 km		
			S.R. Value : 30000 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/F-3101/5		Dated 19.06.2025			
Whitefield Exchange					
1.	Whitefield Exchange to Kadugodi bride	IV Less than 430 V			
2.	Whitefield Exchange to Hope Farm Junction				
3.	Whitefield Exchange to Bridge tech road				
4.	Whitefield Exchange to Nallurahali				
5.	Whitefield Exchange to Immadahalli Road				
Varthur Exchange					
1.	Varthur Exchange to Madhuranagar	IV Less than 430 V			
2.	Varthur Exchange to Balegere				
3.	Varthur Exchange to Gunjur				
4.	Varthur Exchange to Halasahalli				
Avalahalli Exchange					
1.	Avalahalli Exchange to Virgonagar	-Out of Parallelism-			
2.	Avalahalli Exchange to Virenahalli				
3.	Avalahalli Exchange to herandahalli				
4.	Avalahalli Exchange to Bandapura				
5.	Avalahalli Exchange to Cheemasandra				
6.	Avalahalli Exchange to Katamnallur Gate				
Vijetha DLC Exchange					
1	Vijetha DLC to Vinayakanagara	IV Less than 430 V			
Prestize DLC Exchange					
1	Prestize Ozone DLC to POZ Gate 2	IV Less than 430 V			
Domlure Exchange					
1.	Domluru Exchange to ISRO Quarters				

2	Domluru Exchange to Karnataka Golf Association	-Out of Parallelism-
3	Domluru Exchange to Madhurai Idli	
4	Domluru Exchange to Ranka Heights Apartments	
5	Domluru Exchange to Near Srinidhi Sagar Hotel	
6	Domluru Exchange to Viveswaryya Kendrya Bhawan Back side	
Indranagar Exchange		
1.	Indranagar Exchange to SBI Jab Nagar	-Out of Parallelism-
2	Indranagar Exchange to Kodihalli Leela Palace	
3	Indranagar Exchange to BESCO-6	
4	Indranagar Exchange to Domlure Exchange	
5	Indranagar Exchange to Dopanhali	
6	Indranagar Exchange to New Horizon School	
7	Indranagar Exchange to Abedkar college	
8	Indranagar Exchange to KFC Signal	
9	Indranagar Exchange to Opp 100 Feet Road Post	
10	Indranagar Exchange to New thipesendra Park	
11	Indranagar Exchange to New thipesendra Temple	
12	Indranagar Exchange to SVR Metro station	

ANNEXURE-II

CEA Case No.: KNK-947		Map Scale : 1 cm= 500 m			
Name of the Power line: 220 kV S/C Underground Transmission Line from 220 kV Cessna Business Park S/s to 220 kV Hagardu S/s in Bangalore South Taluk.		Total Length : 11.963 km			
		S.R. Value : 30000 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-3101/2091			Dated 26.11.2020		
1.	KSR Bengaluru to Bengaluru Cantonment	-Out of Parallelism-			
2	Bengaluru Cantonment to Bengaluru - East	-Out of Parallelism-			
3	Bengaluru – East to Baiyyappanahalli	-Out of Parallelism-			
4	Baiyyappanahalli to Banaswadi	-Out of Parallelism-			
5	Banaswadi to Hebbal	-Out of Parallelism-			
6	Baiyyappanahalli to Krishnarajapuram	-Out of Parallelism-			
7	Baiyyappanahalli to Channasandra	-Out of Parallelism-			
8	Channasandra to Yelhanka	-Out of Parallelism-			
9	Krishnarajapuram to Whitefield	-Out of Parallelism-			
10	Whitefield to Devangonthe	-Out of Parallelism-			
11	Baiyyappanahalli to Karmelaram	2.0	0.00042	28500	12
12	Karmelaram to Heelalige	-Out of Parallelism-			