



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-964		
<b>Induced Voltage (IV) calculation for PTCC proposal of 220 kV S/C Transmission Line partially on MC/DC/SC tower and partially UG cable from 400/220 kV Nelamangala S/s to 220 kV Rajajinagar S/s in Bangalore Urban District. [Length- OH Line- 22.299 km &amp; UG Line-0.725 km, Total - 23.024 km]– Regd.</b>		
S. No	Reference No.	Dated
(i)	KPTCL: CEE/SLDC/PTCC/F-3166/3276-84	04.03.2021
(ii)	KPTCL: e-Mail	11.08.2025
(iii)	BSNL: SR-PTCC/SKT2995/7	02.05.2025
(iv)	South Western Railway: SG/SWR/PTCC/F-3166/2155	26.04.2021
(v)	Defense: B/46937/Sigs7(b)/2369	13.04.2021

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 zone for 220 kV proposed S/S 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 kV Rajajinagar S/s	83	37.5	0.26	1777	1148	32	NA

As per the Telecom Details submitted by BSNL vide above reference (iii), Rajajinagar telephone exchange of BSNL is falling within the EPR zone of 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 111<sup>th</sup> and 112<sup>th</sup> 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**

<b>CEA Case No.:</b> KNK-964			<b>Map Scale</b> : 1 cm= 500 m		
<b>Name of the Power line:</b> 220 kV S/C Transmission Line partially on MC/DC.SC tower and partially UG cable from 400/220 kV Nelamangala S/s to 220 kV Rajajinagar S/s in Bangalore Urban District.			<b>Total Length</b> : 23.024 km		
			<b>S.R. Value</b> : 25000 Ohm-cm		
<b>S.No.</b>	<b>Telecom. Details</b>	<b>Length of Parallels in Km.</b>	<b>Mutual Coupling in Ohms.</b>	<b>Effective Fault current in Amps.</b>	<b>I.V in Volts.</b>

**BSNL:** SR-PTCC/SKT2995/7 Dated 02.05.2025

**Affected Blocks & Telecom Circuits Details**

1.	YPR T/E to APMC Yard Market Road	IV Less than 430 V
2.	YPR T/E to Dr. Rajkumar Samadhi Road	
3.	YPR T/E to Llory Stand	
4.	YPR T/E to Shankaranagar Main Road	
5.	Rajajinagar 2 <sup>nd</sup> Block Exchange to ESI Hospital Main Road	
6.	Rajajinagar 2 <sup>nd</sup> Block Exchange to Basaveshwarnagar College Road	
7.	Rajajinagar 2 <sup>nd</sup> Block Exchange to West of Chord Road	

**ANNEXURE-II**

CEA Case No.: KNK-964		Map Scale : 1 cm= 500 m			
Name of the Power line: 220 kV S/C Transmission Line partially on MC/DC.SC tower and partially UG cable from 400/220 kV Nelamangala S/s to 220 kV Rajajinagar S/s in Bangalore Urban District.		Total Length : 23.024 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-3166/2155		Dated 26.04.2021			
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 Krishnarajapuram				-Out of Parallelism-
5	Baiyyappanahalli to Karmelaram				-Out of Parallelism-
6	Baiyyappanahalli to Banaswadi				-Out of Parallelism-
7	Banaswadi to Hebbal				-Out of Parallelism-
8	Hebbal to Lottegoloballi				-Out of Parallelism-
9	KSR Bengaluru to Yeshvantpur	3.5	0.0042	30500	128
10	Yeshvantpur to Lottegoloballi				-Out of Parallelism-
11	Yeshvantpur to chikabanavara	2.5	0.0036	26000	94
12	Chikabanavara to Golahalli				-Out of Parallelism-
13	Golahalli to Dodbele				-Out of Parallelism-
14	Chikanamavara to Nelamangala	3.0	0.0040	28500	115
15	Nelamangala to Solur				-Out of Parallelism-
16	Baiyyappanahalli to Channasandra				-Out of Parallelism-
17	Channasandra to Yelhanka				-Out of Parallelism-
18	Lottegoloballi to Yelhanka				-Out of Parallelism-
19	Yelhanka to Rajankunti				-Out of Parallelism-
20	Yelhanka to Devanhalli				-Out of Parallelism-
21	KSR Bengaluru to Nayanhalli				-Out of Parallelism-
22	Nayanhalli to Kengeri				-Out of Parallelism-
23	Kengeri to Hejjala				-Out of Parallelism-