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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-998		
Induced Voltage (IV) calculation for PTCC Proposal of 220 kV UG cable Transmission Line from Existing 220/66 kV Anand Rao Circle to Proposed 400/220kV SRS Peenya S/s. (Length: 10.26 km) –Regd.		
S. No	Reference No.	**Dated**
(i)	KPTCL : CEE/SLDC/PTCC/F-3356/12589-98	02.03.2022
(ii)	KPTCL : e-Mail	13.03.2026
(iii)	BSNL : SR-PTCC/SKT3893/5	27.11.2025
(iv)	South Western Railway: SG/SWR/PTCC/F-3356/2339	07.07.2022
(v)	Defense: B/46937/Sigs 7(b)/2803	02.02.2024

The PTCC proposal submitted vide above references (i) and (ii) has been examined. The low frequency induction on Telecom circuits of BSNL and Block & Telecom circuits of of South Western Railway with respect to details furnished vide above references (iii) and (iv) has been computed. The voltage likely to be induced on paralleling Telecom circuits of BSNL and Block & Telecom circuits of 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 has issued No Objection Certificate (NOC) vide reference (v).

EPR zone for proposed S/s is mentioned below:

Name of the proposed Substation	Half diagonal distance , D/2 (mts)	Fault Current I (A)	Resistance of Earth Mat, R (ohms)	d (mts) at 430 V	d (mts) at 650 V	d (mts) at 7kV	d (mts) at 10kV
400/220 kV Station at SRS Peenya	165	47250	0.08	1285	794	N.A	N.A

As per the details submitted by BSNL vide reference (iv) above, no telephone exchanges/BTS 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.

Encl.: As above

Digitally signed by
Suman Kumar Maharana
Date: 27-03-2026
12:01:25

Chief Engineer

To,

1.	PCSTE (South Western Railway)	Principal Chief Signal & Telecom Engineer, Rail Soudha, Gadag Road, Hubballi-580020	Annexure-I
2.	DET (PTCC), Southern Zone	BSNL, Inspection Circle, 2nd Floor, Sanchar Complex, WMS Compound, Jahangir 5th Block, 9th Main, 47th Cross ,Bangalore-560041	Annexure-II
3.	Member (Power), KPTCL	Chief Engineer Electricity, SLDC #28, Race Course Road, Bengaluru-560009	Copy for information.

ANNEXURE-I

CEA Case No. : KNK-998 **Name of the Power line**: PTCC Proposal of 220 kV UG S/C Transmission Line from Existing 220/66 kV Anand Rao Circle to Proposed 400/220kV SRS Peenya S/s.			**Map Scale** : 1 cm= 500 m **Total Length** : 10.26 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/SKT3893/5 Dated 27.11.2025					
Affected Blocks & Telecom Circuits Details **Malleswaram EXCHANGE - (F-3356)**					
1.	Malleswaram T/E to Seshadripuram Main Road	I.V. Less than 430 V			
2.	Malleswaram T/E to Seshadripuram Main Road(P7)	1.9	0.01136	16715	190
3.	Malleswaram T/E to 6th main 6th cross	I.V. Less than 430 V			
4.	Malleswaram T/E to 15th cross west park	I.V. Less than 430 V			
5.	Malleswaram T/E to 8th main 15th cross	I.V. Less than 430 V			
6.	Malleswaram T/E to 6th main 7th cross	I.V. Less than 430 V			
7.	Malleswaram T/E to Yesventpur police stn	I.V. Less than 430 V			
8.	Malleswaram T/E to Seshadripuram Main Road	I.V. Less than 430 V			
9.	Malleswaram T/E to Seshadripuram Main Road(P25)	2.05	0.01087	19310	210
10.	Malleswaram T/E to Vayyalikaval	I.V. Less than 430 V			
11.	Malleswaram T/E to Seshadripuram Main Road	I.V. Less than 430 V			
12.	Malleswaram T/E to Seshadripuram Main Road	I.V. Less than 430 V			
13.	Malleswaram T/E to Vayyalikaval	I.V. Less than 430 V			

Affected Blocks & Telecom Circuits Details **RAJAJI NAGAR EXCHANGE - (F-3356)**					
1.	Rajajinagar T/E to Maruti extension	0.3	0.001437	19474	28

2.	Rajajinagar T/E to Maruti extension	I.V. Less than 430 V			
3.	Rajajinagar T/E to Maruti extension	I.V. Less than 430 V			
4.	Rajajinagar T/E to Maruti extension	I.V. Less than 430 V			
5.	Rajajinagar T/E to Prakashnagar	I.V. Less than 430 V			
6.	Rajajinagar T/E to Prakashnagar	I.V. Less than 430 V			
	Affected Blocks & Telecom Circuits Details **YESHWANTHPUR (YPR T/E) EXCHANGE (F-3356)**				
1.	YPR T/E to APMC Yard Market Road(P24)	1.5	0.0092	20435	188
2.	YPR T/E to Dr. Rajkumar Samadhi Ring Road	I.V. Less than 430 V			
3.	YPR T/E to Lorry Stand	I.V. Less than 430 V			
4.	YPR T/E to Shankarnagar Main Road	I.V. Less than 430 V			
5.	YPR T/E to Tumkur Road	I.V. Less than 430 V			
6.	YPR T/E to APMC Yard Market	I.V. Less than 430 V			
7.	YPR T/E to APMC Yard Market	I.V. Less than 430 V			
8.	YPR T/E to APMC Yard Market	I.V. Less than 430 V			
9.	YPR T/E to Dr.Rajkumar Road	I.V. Less than 430 V			
	Affected Blocks & Telecom Circuits Details **PEENYA (P1 PNY) EXCHANGE (F-3356)**				
1.	P1 PNY to P2	Out of Parallelism			
2.	P1 PNY to P3	0.75	0.0018	16027	29
3.	P1 PNY to P16	I.V. Less than 430 V			
4.	P1 PNY to P17	I.V. Less than 430 V			
5.	P1 PNY to P18	I.V. Less than 430 V			
6.	P1 PNY to P19	I.V. Less than 430 V			
7.	P1 PNY to P20	I.V. Less than 430 V			
8.	P1 PNY to P21	I.V. Less than 430 V			
9.	P1 PNY to P22	I.V. Less than 430 V			
10.	P1 PNY to P24	I.V. Less than 430 V			

11.	P1 PNY to P25	I.V. Less than 430 V			
12.	P1 PNY to P26	I.V. Less than 430 V			
13.	P1 PNY to P27	I.V. Less than 430 V			
14.	P1 PNY to P28	I.V. Less than 430 V			
15.	P1 PNY to P29	I.V. Less than 430 V			
16.	P1 PNY to P30	I.V. Less than 430 V			
Affected Blocks & Telecom Circuits Details **CHIKKASANDRA (CKS) EXCHANGE (F-3356)**					
1.	CKS to CKS31	I.V. Less than 430 V			
2.	CKS to CKS32	I.V. Less than 430 V			
3.	CKS to CKS33	I.V. Less than 430 V			
Affected Blocks & Telecom Circuits Details **CHIMNEY HILLS EXCHANGE - (F-3356)**					
1.	CHIMNEY HILLS TE to CHH 36(2 kms within Chh Campus)	Outside IV consideration zone			
Affected Blocks & Telecom Circuits Details **B CHIKKANANAVARA EXCHANGE - (F-3356)**					
1.	B CHIKKANANAVARA TE to CB37	Outside IV consideration zone			
Affected Blocks & Telecom Circuits Details **PEENYA INDUSTRIAL (PNM) EXCHANGE (F-3356)**					
1.	PNM to B5	Out of Parallelism			
2.	PNM to B6	1	0.000868	16117	14
3.	PNM to B7	I.V. Less than 430 V			
4.	PNM to B8	I.V. Less than 430 V			
5.	PNM to B9	I.V. Less than 430 V			
6.	PNM to B10	Out of Parallelism			
7.	PNM to B11	Out of Parallelism			

8.	PNM to B12	Out of Parallelism			
9.	PNM to B13	Out of Parallelism			
10.	PNM to B23	I.V. Less than 430 V			
Affected Blocks & Telecom Circuits Details **YESHWANTHPUR (YPR T/E) EXCHANGE (F-3356)**					
1.	Y1 YPR to Y2	I.V. Less than 430 V			
2.	Y1 YPR to Y3	I.V. Less than 430 V			
3.	Y1 YPR to Y4	I.V. Less than 430 V			
4.	Y1 YPR to Y5	I.V. Less than 430 V			
5.	Y1 YPR to Y6	I.V. Less than 430 V			
6.	Y1 YPR to Y7	I.V. Less than 430 V			
7.	Y1 YPR to Y8	I.V. Less than 430 V			
8.	Y1 YPR to Y9	I.V. Less than 430 V			
9.	Y1 YPR to Y10	I.V. Less than 430 V			
10.	Y1 YPR to Y12	I.V. Less than 430 V			
11.	Y1 YPR to Y13	I.V. Less than 430 V			
12.	Y1 YPR to Y14	I.V. Less than 430 V			
13.	Y1 YPR to Y15	1.2	0.00424	14145	60.47
14.	Y1 YPR to Y16	I.V. Less than 430 V			
15.	Y1 YPR to Y17	I.V. Less than 430 V			
16.	Y1 YPR to Y18	I.V. Less than 430 V			
17.	Y1 YPR to Y19	I.V. Less than 430 V			
18.	Y1 YPR to Y20	I.V. Less than 430 V			
19.	Y1 YPR to Y21	I.V. Less than 430 V			
20.	Y1 YPR to Y22	I.V. Less than 430 V			
21.	Y1 YPR to Y23	I.V. Less than 430 V			
22.	Y1 YPR to Y24	I.V. Less than 430 V			
23.	Y1 YPR to Y25	I.V. Less than 430 V			

24.	Y1 YPR to Y26	I.V. Less than 430 V
25.	Y1 YPR to Y27	I.V. Less than 430 V
26.	Y1 YPR to Y28	I.V. Less than 430 V
27.	Y1 YPR to Y29	I.V. Less than 430 V
28.	Y1 YPR to Y30	I.V. Less than 430 V
29.	Y1 YPR to Y31	I.V. Less than 430 V
30.	Y1 YPR to Y32	I.V. Less than 430 V
31.	Y1 YPR to Y33	I.V. Less than 430 V
32.	Y1 YPR to Y34	I.V. Less than 430 V
33.	Y1 YPR to Y35	I.V. Less than 430 V
34.	Y1 YPR to Y36	I.V. Less than 430 V
35.	Y1 YPR to Y37	I.V. Less than 430 V
36.	Y1 YPR to Y38	I.V. Less than 430 V
37.	Y1 YPR to Y39	I.V. Less than 430 V
38.	Y1 YPR to Y41	I.V. Less than 430 V
39.	Y1 YPR to Y42	I.V. Less than 430 V
40.	Y1 YPR to Y43	I.V. Less than 430 V
41.	Y1 YPR to Y44	I.V. Less than 430 V
42.	Y1 YPR to Y45	I.V. Less than 430 V
43.	Y1 YPR to Y46	I.V. Less than 430 V
44.	Y1 YPR to Y47	I.V. Less than 430 V
45.	Y1 YPR to Y48	I.V. Less than 430 V
46.	Y11 RNS DLC to Y10	Out of Parallelism
47.	Y40 MUT DLC to Y48	I.V. Less than 430 V
Affected Blocks & Telecom Circuits Details **IISC(11 IISC) EXCHANGE (F-3356)**		
1.	11 IISC to I2	I.V. Less than 430 V
2.	11 IISC to I3	I.V. Less than 430 V
3.	11 IISC to I4	I.V. Less than 430 V

4.	11 IISC to I5	I.V. Less than 430 V			
5.	11 IISC to I6	I.V. Less than 430 V			
6.	11 IISC to I7	I.V. Less than 430 V			
7.	11 IISC to I8	I.V. Less than 430 V			
8.	11 IISC to I9	I.V. Less than 430 V			
9.	11 IISC to I10	I.V. Less than 430 V			
10.	11 IISC to I11	I.V. Less than 430 V			
11.	11 IISC to I12	I.V. Less than 430 V			
12.	11 IISC to I13	I.V. Less than 430 V			
13.	11 IISC to I14	I.V. Less than 430 V			
14.	11 IISC to I15	I.V. Less than 430 V			
15.	11 IISC to I16	I.V. Less than 430 V			
16.	11 IISC to I17	I.V. Less than 430 V			
17.	11 IISC to I18	I.V. Less than 430 V			
Affected Blocks & Telecom Circuits Details **Distric Telegraph Office (D10 DTO) EXCHANGE (F-3356)**					
1.	D10 DTO to D1	I.V. Less than 430 V			
2.	D10 DTO to D2	I.V. Less than 430 V			
3.	D10 DTO to D3	1.3	0.00573	18671	107
4.	D10 DTO to D4	I.V. Less than 430 V			
5.	D10 DTO to D5	I.V. Less than 430 V			
6.	D10 DTO to D6	I.V. Less than 430 V			
7.	D10 DTO to D7	I.V. Less than 430 V			
8.	D10 DTO to D8	I.V. Less than 430 V			
9.	D10 DTO to D9	I.V. Less than 430 V			

ANNEXURE-II

CEA Case No. : KNK-998 **Name of the Power line** PTCC Proposal of 220 kV UG S/C Transmission Line from Existing 220/66 kV Anand Rao Circle to Proposed 400/220kV SRS Peenya S/s.			**Map Scale** : 1 cm= 500 m **Total Length** : 10.26 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-3356/2339 Dated 07.07.2022					
Affected Blocks & Telecom Circuits Details					
1.	KSR Bengaluru - Bengaluru Cantonment	1	0.0011	26200	29
2.	Bengaluru Cantonment- Bengaluru East	0.25	0.000036	27333	1
3.	Bengaluru East - Baiyyappanahalli	Out of Parallelism			
4.	Baiyyappanahalli - Krishnarajapuram	Outside IV consideration zone			
5.	Baiyyappanahalli - Banaswadi	Outside IV consideration zone			
6.	Banaswadi - Hebbal	2.5	0.00073	20600	15
7.	Hebbal - Lottegolahall	0.5	0.00005	19821	1
8.	Channasandra -Yelahanka	Outside IV consideration zone			
9.	KSR Bengaluru -Yesvantpur	4.8	0.00412	16000	66
10.	Yesvantpur - Lottegolahalli	1.7	0.000285	21000	6
11.	Yesvantpur -Chikabanavara	1.75	0.000308	22727	7
12.	Chikabanavara - Golahalli	Out of Parallelism			
13.	Chikabanavara - Nelamangala	Outside IV consideration zone			
14.	Lottegolahalli - Yelahanka	0.4	0.00007	14361	1
15.	KSR Bengaluru - Nayandahalli	1.35	0.00011	17200	2
16.	Nayandahalli - Kengeri	Outside IV consideration zone			
17.	Kengeri - Hejjala	Outside IV consideration zone			