

I/32301/2023



सत्यमेव जयते

भारत सरकार
Government of India
विद्युत मंत्रालय
Ministry of Power
केन्द्रीय विद्युत प्राधिकरण
Central Electricity Authority
विद्युत संचार विकास प्रभाग
Power Communication Development Division

CEA Case No. : KER-336		
Induced Voltage (IV) calculation in respect of PTCC proposal for LILO of existing 220 kV Kayamkulam – Kundara (KY-KD) line from location 65 & 66 at Sasthankotta on MC towers - regd.		
S. No	Reference No.	Dated
(i)	KSEB: DCE (TS)/EEII/AEE VIII/PTCC/220/110 kV MCMV Transgrid Quilon Package/2020-21/123	30.04.2020
(ii)	KSEB: DCE (TS)/EEII/AEE VIII/PTCC/220/110 kV MCMV Transgrid Quilon Package/2022-23/1003	19.09.2022
(iii)	KSEB: Email	22.02.2023
(iv)	BSNL: SR-PTCC/SKL 2912/05	31.05.2021
(v)	Southern Railway: W.384/3/4/569	26.05.2020
(vi)	Defense: B/46937/Sigs 7(b)/2357	06.04.2021

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

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
220/110 kV Sasthankotta	67.5	24	0.8	2946.4	1926.3	117.6	62

As per the details submitted by BSNL, there are no telecom exchanges falling within 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

Director

To,

1.	Divisional Engineer (PTCC), Southern Zone	BSNL, Inspection Circle, 1st Floor, Raj Bhavan Exchange No. 26, Sardar Patel Road, Guindy, Chennai-600032	
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2.	General Manager (S&T)	Southern Railway, Head Quarters Office, S&T Branch, Chennai - 600003	
3.	Deputy Chief Engineer (Tech)	KSEB, O/o Chief Engineer Transmission South Region, 3 rd Floor, Vidyuthi Bhavanam, Pattom, Thiruvananthapuram - 695004	Copy for information

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ANNEXURE-I

CEA Case No.: KER-336		Map Scale : 1 cm= 500 m			
Name of the Power line: LILO of existing 220 kV Kayamkulam – Kundara (KY-KD) line from location 65 & 66 at Sasthankotta on MC towers		Total Length : 6.5 km			
		S.R. Value : 50000 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/SKL 2912/05 Date: 31.05.2021

IEK	KUNDARA TELEPHONE EXCHANGE				
1	Exge to P.21				
2	Exge to P.22				
3	Exge to P.23				
4	Exge to P.24				
5	Exge to P.25				
6	Exge to P.26				
7	Exgeto P.27				
8	Exge to P.30				
9	Exge to P.31				
10	Exge to P.32				
11	Exge to P.33				
12	Exge to P.34				
13	Exge to P.35 to DP.3501				
14	Exge to P.36 to DP.3601				
15	Exge to P.37 to DP.3701				
16	Exge to P.38 to DP.3801				
17	Exge to P.39 to DP.3901				
18	Exge to P.40				

IV less than 430 V

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19	Exge to P.43	IV less than 430 V
20	Exge to P.44 to DP.4401	
21	Exge to P.45	
22	Exge to P.46	
23	Exge to P.48	
24	Exge to P.51	
25	Exge to P.52	
26	Exge to P.53	
27	Exge to P.60	
28	Exge to P.62 to DP.6201	
29	Exge to P.63	
30	Exge to P.64	
31	Exge to P.65	
32	Exge to P.66 to DP.6601	
33	Exge to P.67 to DP.6701	
34	Exge to P.68 to DP.6801	
35	Exge to P.69 to DP.6901	
36	Exge to P.72	
37	Exge to P.80 to DP.8001	
38	Exge to P.81	
39	Exge to P.83	
40	Exge to P.84	
41	Exge to P.85 to DP.8501	
42	Exge to P.86	
43	Exge to P.87	
44	Exge to P.88 to DP.8801	
45	Exge to P.89	

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II EXK	EAST KALLADA TELEPHONE EXCHANGE				
1	Exge to DP.01	IV less than 430 V			
2	Exge to DP.02				
3	Exge to KP.21 to DP.21				
4	Exge to KP.22 to DP.22				
5	Exge to KP.30 to DP.30				
6	Exge to KP.31 to DP.31				
7	Exge to DP.40 to DP.40				
8	Exge to KP.41 to DP.41				
9	Exge to KP.SO to DP.SO				
10	Exge to KP.51 to DP.51				
11	Exge to KP.60 to DP.60				
12	Exge to KP.70 to DP.70				
13	Exge to KP.80 to DP.80				
14	Exge to KP.90 to DP.90				
III EXE	ELAMPALLOOR TELEPHONE EXCHANGE				
1	Exge to DP.01	IV less than 430 V			
2	Exge to DP.02				
3	Exge to DP.03				
4	Exge to DP.04 .				
5	Exge to P.21to DP.21				
6	Exge to P.22 to DP.22				
7	Exge to P.23 to DP.23				
8	Exge to P.24 to DP.24				
9	Exge to P.25 to DP.25				
10	Exge to P.26 to DP26				

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11	Exge to P.27 to DP.27	IV less than 430 V			
12	Exge to P.28 to DP.28				
13	Exge to P.31to DP.31				
14	Exge to P.32 to DP. 2				
15	Exge to P.33 to DP.33				
16	Exge to P.34 to DP.34				
17	Exge to P.35 to DP.35				
18	Exge to P.36 to DP.36				
19	Exge to P.37 to DP.37				
20	Exge to P.38 to DP.38				
21	Exge to P.39 to DP.39				
22	Exge to P.41to DP.41				
IV EXM	MUNRO ISLAND TELEPHONE EXCHANGE				
1	Exge to DP.01	IV less than 430 V			
2	Exge to DP.02				
3	Exge to MP.21to DP.21				
4	Exge to MP.31 to DP.41				
5	Exge to MP.41to DP.41				
6	Exge to MP.51 to DP.51				
7	Exge to MP.61 to DP.61				
8	Exge to MP.71to DP.71				
9	Exgeto MP.81to DP.81				
10	Exge'to MP.91to DP.91				
V EI	SASTHAMKOTTATELEPHONE EXCHANGE				
1	Exge to P.01	IV less than 430 V			
2	Exgeto P:02				

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3	Exge to P.03	IV less than 430 V			
4	Exge to P.04				
5	Exge to P.05				
6	Exge to P.06				
7	Exge to P.07				
8	Exge to P.08	2.1	0.0595	7752	462
9	Exge to P.09	3.3	0.0744	7745	577
10	Exge to P.10	IV less than 430 V			
11	Exge to P.11to DP.02				
12	Exge to P.11to DP.OS				
13	Exge to P.12				
14	Exge to P.13				
15	Exge to P.14				
16	Exge to P.15 to DP.01				
17	Exge to P.16				
18	Exge to P.17				
19	Exge to P.18				
20	Exge to P.19				
21	Exge to P.20				
22	Exge to P.21				
23	Exge to P.22				
24	Exge to P.23				
25	Exge to P.24				
26	Exge to P.25 to DP.03				
27	Exge to P.26 to DP.04				
28	Exge to P.27				
29	Exge to P.28				

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30	Exge. to P.29	IV less than 430 V			
31	Exge to P.30				
32	Exge to P.31				
33	Exge to P.32				
34	Exge to P.33				
VI E2	KUNNATHUR TELEPHONE EXCHANGE				
1	Exge to KP.21	IV less than 430 V			
2	Exge to KP.22				
3	Exge to KP.23				
4	Exge to KP.24				
5	Exge to KP.25				
6	Exge to KP.26				
7	Exge to KP.27				
8	Exge to KP.28				
VII EXP	PUTHOOR TELEPHONE EXCHANGE				
1.	Exge to P.21to DP.2101	IV less than 430 V			
2	Exge to P.22 to DP.2201				
3	Exge to P.23 to DP.2301				
4	Exge to P.24 to DP.2401				
5	Exge to P.25 to DP.2501				
6	Exge to P.26 to DP.2601				
7	Exge to P.31 to DP.3101				
8	Exge to P.32 to DP.3201				
9	Exge to P.32 to P.33 to DP.3301				
10	Exge to P.34 to DP.3401				
11	Exge to P.34A to DP.34A01				
12	Exge to P.36 to DP.3601				

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13	Exge to P.41 to DP.4101	IV less than 430 V							
14	Exge to P.46 to DP.4601								
15	Exge to P.46 to P.46A to DP.4601A								
16	Exge to P.48 to DP.4801								
17	Exge to P.51 to DP.5101								
18	Exge to P.54 to DP.5601								
19	Exge to P.56								
20	Exge to P.58 to DP.5801								
21	Exge to P.61 to DP.6101								
22	Exge to P.66 to DP.6601								
VIII EXKI	KAITHAKODE TELEPHONE EXCHANGE								
1	Exge to P.21 to DP.21					IV less than 430 V			
2	Exge to P.22 to DP.22								
3	Exge to P.23 to DP.23								
4	Exge to P.24								
5	Exge to P.32 to DP.32								
IX EXIR	IRUMPANANGAD TELEPHONE EXCHANGE								
1	Exge to P.31 to DP.31	IV less than 430 V							
2	Exge to P.32 to DP.33								
3	Exge to P.33								
4	Exge to P.36 to DP.32								
5	Exge to P.21 to DP.36								

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ANNEXURE-II

CEA Case No.: KER-336			Map Scale : 1 cm= 500 m		
Name of the Power line: LILO of existing 220 kV Kayamkulam – Kundara (KY-KD) line from location 65 & 66 at Sasthankotta on MC towers			Total Length : 6.5 km		S.R. Value : 50000 Ohm-cm
S.No.	Telecom. Details	Length of Parallelism in Km.	Mutual Coupling in Ohms.	Effective Fault current in Amps.	I.V in Volts.
Southern Railway Letter No: W.384/3/4/569 Date: 26.05.2020					
1	Karunagapalli - Sastankotta	3.7	0.0013	6923	9
2	Sastankotta - Perinad	2.5	0.0012	5833	7
3	Killikullor - Kundra	0.3	0.0001	5298	1
4	Kundra – Ezhukone	Out of parallelism			

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No: 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)/2357/

06 Apr 2021

CE(T-S)

DY CE(T-S)

EF

Office of the Chief Engineer (Transmission South)
 Kerala State Electricity Board Limited
 Vidyuthi Bhavanam, Pattom
 Thiruvananthapuram-695 004, Kerala

TA

26 APR 2021

No

208/2021

EEII

INWARD

CONSTRUCTION OF 6.5KM, 220/110KV MCMV LINE FROM EAST KALLADA TO SASTHANKOTTA BY LILO-ING EXISTING KAYAMKULAM-KUNDARA 220KV LINE (KY-KD) FROM EAST KALLADA (LOC 65&66) UNDER TRANSGRID-2.0-PHASE-II, QUILON PACKAGE-PTCC CLEARANCE-REG.

1. Refer your letter No DCE(TS)/EEII/AEE VIII/PTCC/ 220/110kV MCMV Transgrid Quilon Package/2020-21/1466 dt 23 Jan 2021 (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.

as
 (A Rawat)
 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

- for information

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