



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-331		
Induced Voltage (IV) calculation in respect of PTCC proposal for Upgradation of existing 66 kV line to 220/110 kV line as MCMV from Edappon 220 kV substation to proposed 220 kV Pathanamthitta substation via proposed 110 kV substation Adoor (28.7 km) - regd.		
S. No	Reference No.	Dated
(i)	KSEB: DCE (TS)/EEII/AEE VIII/PTCC/Edappon-PTA 220kV/2020-21/1626	15.02.2021
(ii)	KSEB: DCE (TS)/EEII/AEE VIII/PTCC/Edappon-PTA 220kV/2022-23/1480	13.01.2023
(iii)	BSNL: SR-PTCC/SKL 280520192449/12	23.01.2023
(iv)	Southern Railway: W.384/3/4/556 received with KSEB at ref. (ii) above	13.05.2019
(v)	Defense: B/46937/Sigs 7(b)/1653 received with KSEB at ref. (ii) above	04.08.2019
(vi)	KSEB: Email	21.12.2023

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

EPR Zones for proposed substation 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 Pathanamthitta S/s	49	10	0.7	748	478	NA	NA

As per the details submitted by BSNL, no Telephone Exchange is 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

Chief Engineer

To,

1.	Divisional Engineer (PTCC), Southern Zone	BSNL, Inspection Circle, 1st Floor, Raj Bhavan Exchange No. 26, Sardar Patel Road, Guindy, Chennai-600032	
2.	Deputy Chief Engineer (Tech)	KSEB, O/o Chief Engineer Transmission South Region, 3 rd Floor, Vidyuthi Bhavanam, Pattom, Thiruvananthapuram - 695004	

ANNEXURE-I

CEA Case No.: KER-331			Map Scale : 1 cm= 500 m		
Name of the Power line: Upgradation of existing 66 kV line to 220/110 kV line as MCMV from Edappon 220 kV substation to proposed 220 kV Pathanamthitta substation via proposed 110 kV substation Adoor			Total Length : 28.7 km		
			S.R. Value : 7500 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/SKL 280520192449/12 Dated 23.01.2023					
Affected Blocks & Telecom Circuits Details					
I	Kaippattur Exchange				
1.	TE to Thrikkovil P08	IV Less than 430 V			
2.	TE to Vellappara P10				
3.	TE to Trippara P07				
4.	TE to Vallikode P09				
5.	TE to Omallor P01				
6.	TE to Panniyali School P04				
7.	TE to School Jn P02				
8.	TE to Narriyapuram P05				
9.	TE to Chandanapally P13				
10.	TE to Tholuzam P12				
11.	TE to Mamud P11				
12.	TE to Pillar P01				
13.	TE to Oonukai P03				
II	Kodumon Exchange				
1.	TE to Eddathita Pillar 34	1.5	0.0618	18200	1125
2.	TE to Eddathita Pillar 35				
3.	TE to Vayanakunnu Pillar				

4.	TE to East Pillar 27	IV Less than 430 V			
5.	TE to Pillar 22				
6.	TE to Old Police Station Aickad Pillar 28				
7.	TE to Pillar 23				
8.	TE to Kodumun Jn Pillar				
9.	TE to Koditayu Pillar				
10.	TE to Pillar 21				
11.	TE to Petrol Pump Pillar				
12.	TE to Gurumandiram Pillar				
13.	TE to Ottathekku Pillar				
14.	TE to Anthrapalli Pillar				
15.	TE to Komathu Pillar				
III	Pallickal Exchange				
1.	TE to Payanallur Pillar	IV Less than 430 V			
IV	Pazhakulam Exchange				
1.	TE to Alummundu Pillar 21	IV Less than 430 V			
2.	TE to 14 th Mile P31				
3.	TE to Pillar 32	2.5	0.0562	15600	877
4.	TE to P41	IV Less than 430 V			
5.	TE to P41				
6.	TE to Pillar 43	3.5	0.0817	14800	1209
V	Peringanadu Exchange				
1.	TE to P21	IV Less than 430 V			
2.	TE to P22				
VI	Parakode Exchange				
1.	Exge to Market Jn P22				
2.	Exge to TB P31				

3.	Exge to Church P21	IV Less than 430 V			
4.	Exge to HS Jn P26				
5.	Exge to Medayil P31				
6.	Exge to Chiranickal Pillar P 32				
VII	Ezhamkulam Exchange				
1.	Exge to Ezhakulam P21	IV Less than 430 V			
2.	Exge to Arukallikal P23				
3.	Exge to Mankoottatam P22				
4.	Exge to Temple P24				
5.	Exge to Mukkuzhikkal P25				
6.	Exge to Puthumala P26				
7.	Exge to Nedumon P29				
8.	Exge to Kilikode P30				
9.	Exge to Plntation P26				
10.	Exge to Theppupara P27				
11.	Exge to Mangad P28				
VIII	Adoor Exchange				
1.	Exge to RDO Pillar	IV Less than 430 V			
2.	Exge to Kottapuram Pillar				
3.	Exge to Mammood Pillar				
4.	Exge to Holycross Pillar				
5.	Exge to Karuavatta Pillar				
6.	Exge to Kuzhiyattu Pillar				
7.	Exge to Chennamapallil Pillar				
8.	Exge to 14 th mile Pillar				
9.	Exge to Aramanapadi Pillar	2.0	0.0410	14200	582
10.	Exge to Mithapuram Pillar	2.75	0.0689	14800	1020

11.	Exge to Paranthal Pillar	3.5	0.1	14600	1460
12.	Exge to Cntrl Jn Pillar	IV Less than 430 V			
13.	Exge to Nellimoottilpadi Pillar				
14.	Exge to Vallakulanagra Pillar P43				
15.	Exge to Vadakadathukavu Pillar				
16.	Exge to Paruthippara Pillar				
17.	Exge to Pillikal Pillar				
18.	Exge to Pannivizha Pillar				
19.	Exge to Krimbanur Pillar	1.5	0.0428	12400	531
20.	Exge to Annandapply Pillar	2.0	0.03924	13200	518
21.	Exge to Mankuzhi Pillar	2.5	0.0507	13800	700
22.	Exge to KRM P41	IV Less than 430 V			
23.	Exge to YMCA Pillar				
IX	Pathanamthitta Exchange				
1.	Exge to Azhoor Pillar	IV Less than 430 V			
2.	Exge to Valanchoozhi Pillar				
3.	Exge to Maroor Pillar				
4.	Exge to Pramadom Pillar				
5.	Exge to Kodumthara Pillar				
X	Mallasassery Exchange				
1.	Exge to Lakoor Pillar	IV Less than 430 V			
2.	Exge to Vallikode Pillar				
3.	Exge to Poomkavu Church Pillar				
4.	Exge to Exchange Pillar				
5.	Exge to Vazhamuttam Pillar				
6.	Exge to Church Pillar				
7.	Exge to Poomkavu jn Pillar				

8.	Exge to Poomkavu Market Pillar				
XI	Edappon Exchange				
1.	Exge to Vazhayil Pillar	1.0	0.035	22100	774
2.	Exge to Anjilimoodu Pillar	1.5	0.054	22200	1199
3.	Exge to Pandanilam Pillar	2.0	0.0736	22800	1678
4.	Exge to Asanmukku Pillar	2.5	0.0656	22400	1469
XII	Palamel Exchange				
1.	Exge to Palamel Pillar	2.25	0.0784	19200	1505
2.	Exge to Muthukattukara Pillar	IV Less than 430 V			
3.	Exge to Ullakavad Pillar				
4.	Exge to Kudassanad Pillar				