



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

CEA Case No.: KER-334		
Induced Voltage (IV) calculation for PTCC proposal of 220 kV DC line from Padom to Koodal (loc. 59)-8.2 km and 220/110 kV line on MCMV towers from Koodal (loc 59) to 220 kV Pathanamthitta SS via 110 kV Koodal SS -17.92 km along the RoW of 66 kV line under Transgrid Sabari Lines and substations package (26.12 km)- regd.		
S.No.	Reference	Dated
(i)	KSEB: DCE(TS)/EEII/AEE VIII/PTCC/Transgrid / Sabarilines & s/s /2019-20/1270	27.08.2019
(ii)	KSEB: KSEB: Email Soil resistivity	23.02.2026
(iii)	BSNL: NOSR-PTCC/SKL100220212915/12	06.02.2023
(iv)	Southern Railway: W.384/3/4/563	04.09.2019
(v)	Defense: B/46937/Sigs 7(b)/1811	28.11.2019

The PTCC proposal submitted vide above reference(s) (i) and (ii) has been examined. The low frequency induction on Telecom circuits of BSNL with respect to details furnished vide above reference (iii) has been computed. The voltage likely to be induced on paralleling Telecom circuits of BSNL under Single Line to Ground fault condition are enclosed at Annexure-I. The screening factors as applicable have been considered. Southern Railway has issued NOC vide reference (iv) above.

ADG (Telecommunications) has issued No Objection Certificate (NOC) vide reference (v) above (attached as Annexure –II).

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 kV Pathanamthitta	49	28	0.058	136	73	NA	NA

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

Encl.: As above

Chief Engineer

To,

1.	DET (PTCC), Southern Zone (Chennai)	BSNL, Inspection Circle, 1st Floor, Raj Bhavan Exchange No. 26, Sardar Patel Road, Guindy, Chennai-600032	
2.	CE (Transmission South)	Vydyuthi Bhavanam, Pattom, Thiruvananthapuram-695004	Copy for information

ANNEXURE-I

CEA Case No.: KER-334			Map Scale : 1 cm= 500 m		
Name of the Power line: 220 kV DC line from Pandom to Koodal(loc. 59)-8.2 km and 220/110 kV line on MCMV towers from Koodal (loc 59) to 220 kV Pathanamthitta SS via 110 kV Koodal SS -17.92 km along the RoW of 66 kV line under Transgrid Sabari Lines and substations package			Total Length: 26.12 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: NOSR-PTCC/SKL100220212915/12 Dated: 06.02.2023					
V Kottayam Exchange Cables					
1.	Exge to P01	0.8	0.034	20144	685
2.	Exge to P02	2.2	0.067	19823	1328
3.	Exge to P03	0.5	0.026	19965	519
4.	Exge to P04	1.4	0.06	19823	1189
Athirumkal DLC Pillars					
1.	DLC-Pakkandam	IV less than 430V			
2.	DLC-Kulathumon Old Pillar				
3.	DLC-PTCC Pillar				
4.	DLC-Karakkakam				
5.	DLC-Kulathumon New Pillar				
Inchappara DLC Cables					
1.	DLC-Nedumoncavu Pillar	IV less than 430 V			
2.	DLC-Gandhi Jn Pillar				
Kollanpady DLC Cables					
1.	DLC-Aravupplalm Pillar	IV less than 430 V			
Murinjikal Exchange Canbles					
1.	Exchange to Athirumkal Pillar	1.6	0.04	16895	676
2.	Exchange to Kollanpady Pillar	1	0.036	17680	636
3.	Exchange to Karimkudukka Pillar	IV less than 430V			

4.	Exchange to Murinjikkal Pillar	IV less than 430 V			
5.	Exchange to Inchappara Pillar	1.7	0.03	18576	557
6.	Exchange to Muttakuzhy Pillar	IV less than 430 V			
7.	Exchange - Padappackal Pillar				
8.	Exchange - Radhapadi Pillar				
9.	Exchange - Colony Pillar				
10.	Exchange to Kurisumukku Pillar				
Konni Exchange Cables					
1.	Exchange – konni Junction Pillar 21	IV less than 430 V			
2.	Exchange –Chinamullu Pillar 22				
3.	Exchange –Maroorpalam Pillar 23				
4.	Exchange –Kliyarachal Pillar	1.6	0.039	15476	604
5.	Exchange –Kulathumkal	2.5	0.049	17596	862
6.	Exchange–Vakayar Pillar	3	0.053	18573	984
7.	Exchange –Mamoodu Pillar	IV less than 430 V			
8.	Exchange –Chittoormukku Pillar				
9.	Exchange –Kizhavalloor Pillar				
10.	Exchange –Town Mankulam Pillar				
11.	Exchange –Anakkoodu Pillar				
12.	Exchange –Marangadu				
13.	Exchange –Elakollor Pillar				
14.	Exchange –police Station Pillar 38				
15.	Exchange –Mankulam Pillar 41				
16.	Exchange –Cherimukku				
17.	Exchange –Vellappara Pillar 44				
18.	Exchange –Lakoor Pillar				
19.	Exchange –Muringamagalam				
20.	Exchange – Changoormukku Pillar				
21.	Exchange – Payyanamon				
22.	Exchange – Konnappara Pillar 55				

23.	Exchange Kuppakara Pillar 57	IV less than 430 V
24.	Exchange – Venmelipdi Pillar 61	
25.	Exchange – Thekkuthottam	
26.	Exchange – Society Pillar 63	
27.	Exchange – Kkarakalapady Pillar 64	
28.	Exchange – Ootupara Pillar 66	
29.	Exchange – Manjakadampu Pillar 71	
30.	Exchange – Ankutyt Pillar 72	
31.	Exchange – Mulamthara Pillar 73	
32.	Exchange – Iravon Pillar 74	
33.	Exchange -Vattamon Pillar 75	

Kalanjoor Exchange Cables

1.	Exchange – Koodal police Station Pillar	0.6	0.056	14476	811
2.	Exchange – Koodal Jn Pillar	0.52	0.049	13498	661
3.	Exchange – punnamoodu Pillar	0.62	0.05	14570	729
4.	Exchange – Nelimuruppu Pillar	0.7	0.06	15431	926
5.	Exchange – KIP Pillar	IV less than 430 V			
6.	Exchange –Palamala Pillar				
7.	Exchange – Kalanjoor Jn Pillar				
8.	Exchange – Udy Jn Pillar				
9.	Exchange –Edathara Pillar				
10.	Exchange – koollammukku Pillar				
11.	Exchange – kallarethu Pillar				
12.	Exchange – Palam Pillar				
13.	Exchange - Gbindu Pillar				
14.	Exchange –Moozhi Pillar				

Mallassery Exchange Cables

1.	Exchange – Poonkvuk Church Pillar	IV less than 430 V
2.	Exchange – Vazhamottam Pillar	
3.	Exchange – Poonkavu Market Pillar	

4.	Exchange – Exchange Pillar	IV less than 430V			
5.	Exchange –Poomkvu Jn Pillar				
6.	Exchange – Church Pillar	1.5	0.052	14006	728
7.	Exchange – Lakoor Pillar	2.1	0.08	16496	1320
8.	Exchange – Vllikode Pillar	2.4	0.089	16652	1482
Pathanamthitta Exchange Cables					
1.	Exchange –Kodumthara Pillar p01	IV less than 430 V			
2.	Exchange –Azhoor Pillar p02				
3.	Exchange –Maroor Pillar p03				
4.	Exchange –Valanchoozhi Pillar p04				
5.	Exchange –Maroor Pillar p05				
6.	Exchange – pramadom Pillar p06				

Tele : 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)/1811/

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

CE(T-S)	Nov 2019
13 DEC 2019	
No	3953/2019
CE II	INWARD

**CONSTRUCTION OF 220KV DC LINE FROM PADOM TO KOODAL (LOC.59)-8.2KM AND
 220/110KV LINE AS MCMV FROM KOODAL (LOC.59) TO 220KV PATHANAMTHITTA
 SUBSTATION (PROPOSED) VIA 110KV SUBSTATION KOODAL (17.92KM) ALONG THE
 EXISTING RIGHT OF WAY OF 66KV LINE-UNDER TRANSGRID SABARI LINES AND
 SUBSTATIONS PACKAGE-PTCC CLEARANCE**

1. Ref your letter No DCE(TS)/EEII/AEE VIII/PTCC/Transgrid/Sabarilines& s/s/2019-20/1270 dt 27 Aug 2019 (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.



(A Rawat)
 Maj
 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

Divisional Engineer Telegraph (PTCC)
 O/o GM (North); BSNL, QA & Inspection Circle,
 CTS Compound, Africa Avenue Road,
 Netaji Nagar, New Delhi-110023

- for information