



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

CEA Case No. : AND-695		
Induced Voltage (IV) calculation for PTCC proposal of 220 kV SMDC Transmission Line from 400 kV Thalamanchipatnam S/s to the proposed 220 kV Bethamcherla S/s in Kurnool Dist. [Length- 76.047 km]– Regd.		
S. No	Reference No.	Dated
(i)	APTRANSCO: EE/Const./Div/AE(T)/KNL/F.No.Bethemcherla/D.No938/19	21.06.2019
(ii)	APTRANSCO: e-Mail	04.09.2024
(iii)	BSNL: SR-PTCC/SAP/2574/08	05.04.2021
(iv)	South Central Railway: SG.85/4/3/PTCC/SCR/2024-25/AP6RTD	22.07.2024
(v)	Defense: B/46937/Sigs7(b)/3911	16.07.2024

The PTCC proposal submitted vide reference (i) & (ii) has been examined. The LF induction on Block and Telecom circuits of BSNL & South Central 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 Central 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 Bethamcherla S/s	108	28	0.15	940	585	N.A	N.A

As per the Telecom Details submitted by BSNL vide above reference (iii), no telephone exchange of BSNL is falling within the EPR zone of proposed 220 kV Substation.

Taking above into consideration, necessary action regarding issuance of PTCC approval for the subject cited transmission line may be taken under intimation to this office.

Encl.: As above

Chief Engineer

1.	Div. Engr.(PTCC) Southern Zone	I floor , Raj Bhavan Exchange No.26, Sardar Patel Road, Guindy, Chennai	
2.	GM (S&T) South Central Railway Railway	O/o CSTE, 7 th Floor, Rail Nilayam Secunderabad	
3.	Chief Engineer APTRANSCO	O/o C.E Construction Vidyut Sabha, Vijaywada	Copy for information

ANNEXURE-I

CEA Case No.: AND-695			Map Scale : 1 cm= 500 m		
Name of the Power line: 220 kV SMDC Transmission Line from 400 kV Thalamanchipatnam S/s to the proposed 220 kV Bethamcherla S/s in Kurnool Dist.			Length : 76.047 km		
			S.R. Value : 30000 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/SAP/2574/08 Dated 05.04.2021

Affected Blocks & Telecom Circuits Details

A	Bethamcherla Exchange				
1	Exge to Pillar 21 DPs 2101-2115				
2	Exge to Pillar 22 DPs 2201-2212				
3	Exge to Pillar 23 DPs 2301-2307				
4	Exge to Pillar 24 DPs 2401-2415				IV Less than 430 V
5	Exge to Pillar 25 DPs 2501-2505				
6	Exge to Pillar 26 DPs 2601-2603				
7	Exge to Pillar 27 DPs 2701-2705				
B	Ranagpuram Exchange				
1	Exchange to Mariamma Temple				
2	Exchange to Bethamcherla Road				
C	Akumalla Exchange				
1	Exge to Owk Road				IV Less than 430 V
2	Exge to Post Office				
3	Exge to Govt. High School				
4	Exge to RG Bank				
D	Sanjimala Exchange				
1	Exge to Kanala Road				
2	Exge to Mudigedu				

3	Exge to Govt. Primary School				
4	Exge to Pillar				
E	Perusomula Exchange				
1	Exge to Post Office	2.0	0.022	14000	309
2	Exge to Kotapadu DP	IV Less than 430 V			
3	Exge to Andhra Bank	1.5	0.024	14200	340
F	Banaganapalli Exchange				
1	Exge to P.30				
2	Exge to P.31 to P.29 to P.28 to DP.2801				
3	Exge to P.31 to P.29 to P.28 to DP.2802				
4	Exge to P.31 to P.29 to P.28 to DP.2803				
5	Exge to P.31 to P.29 to P.28 to DP.2804				
6	Exge to P.21 to DP.2101				IV Less than 430 V
7	Exge to P.21 to DP.2102				
8	Exge to P.21 to DP.2103				
9	Exge to P.21 to DP.2104				
10	Exge to P.21 to DP.2105				
11	Exge to P.21 to DP.2106				
12	Exge to P.22 to DP.2201				
13	Exge to P.26				
14	Exge to P.25				
G	Palukur Exchange				
1	Exge to P.21 to DP.2101				
2	Exge to P.21 to DP.2102				
3	Exge to DP.IZ				IV Less than 430 V
4	Exge to DP.IZ				
5	Exge to DP.IZ				
6	Exge to DP.IZ				
7	Exge to DP.IZ				

8	Exge to DP.IZ	IV Less than 430 V
H	Nandivaram Exchange	
1	Exge to P.21 to DP.2101	
2	Exge to P.21 to DP.2102	
3	Exge to P.21 to DP.2103	
4	Exge to P.21 to DP.2104	
5	Exge to DP.IZ01	
6	Exge to DP.IZ02	
7	Exge to DP.IZ03	
8	Exge to DP.IZ04	

ANNEXURE-II

CEA Case No.: AND-695		Map Scale : 1 cm= 500 m			
Name of the Power line: 220 kV SMDC Transmission Line from 400 kV Thalamanchipatnam S/s to the proposed 220 kV Bethamcherla S/s in Kurnool Dist.		Length : 76.047 km		S.R. Value : 30000 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 Central Railway: SG.85/4/3/PTCC/SCR/2024-25/AP6RTD					
Dated 22.07.2024					
<u>Affected Blocks & Telecom Circuits Details</u>					
1	Jammalamaduga (JMDG) -S.Uppalapadu (R/S)	-Out of Parallelism-			
2	S.Uppalapadu (SUPP) -Nossam(NOSM) (R/S)	-Out of Parallelism-			
3	Nossam(NOSM) - Sanjamala (SJMA)	-Out of Parallelism-			
4	Sanjamala (SJMA) -Koilakuntla(KLKA) (R/S)	-Out of Parallelism-			
5	KoilaKuntla (KLKA) - Banaganapalli (BGNP) (R/S)	9.5	0.0054	15650	85
6	Banaganapalli (BGNP) - Madduru	6.5	0.002	16100	32
7	Madduru - Nandyal (NDL) (R/S)	-Out of Parallelism-			
8	Malkapuram(MLK) - Rangapuram (RGM) (R/S)	-Out of Parallelism-			
9	Rangapuram (RGM) - Betamcherla (BMH) (R/S)	7.0	0.0154	23400	360
10	Betamcherla (BMH) - Bugganipalli (BEY) (R/S)	2.0	0.00068	17500	12
11	Bugganipalli (BEY) - Krishnammakona (KEF) (R/S)	-Out of Parallelism-			
12	Krishnammakona (KEF) - Panyam (PNM) (R/S)	-Out of Parallelism-			
13	Panyam (PNM) - Nandyal (NDL) (R/S)	-Out of Parallelism-			
14	Regadipalli (RLL) - Vanganur (VRN) (R/S)	-Out of Parallelism-			
15	Vanganur (VRN) - Challavaripalle (CLPE) (R/S)	-Out of Parallelism-			