

I/34467/2024



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. : GUJ-746		
Induced Voltage (IV) calculation for PTCC proposal of 220 kV D/C line from 400kV Vadavi S/S to proposed 220kV Sanand Railway S/S (30.54 km)- regd.		
S. No	Reference No.	Dated
(i)	GETCO: CE(Project)/EE(Tr.-3)/2707	04.10.2017
(ii)	GETCO Email:	13.03.2024
(iii)	BSNL: IC/MBI/PTCC/GUJ-2705	20.02.2019
(iv)	Western Railway: SG.158/28/12/1017	18.10.2019
(v)	Defense: B/46937/Sigs 7(b)/722	02.02.2018

The PTCC proposal submitted vide reference (i) and (ii) has been examined. The LF induction on communication circuits of BSNL and Western Railway with respect to details furnished vide above reference (iii) & (iv) respectively have been computed. The voltage likely to be induced on paralleling communication cables of BSNL and Western 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 (v) 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 kV Sanand S/S	98.62	28	0.06	286.7	156.3	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 may be taken under intimation to this office.

Encl.: As above

Chief Engineer

I/34467/2024

To,

1.	Divisional Engineer (PTCC), Western Zone	QA & Inspection circle, 1 st floor, D- wing, BSNL Admin Bldg., Junu Tara Road, Santacruz (West), Mumbai-400054	
2.	GM (S&T)	Western Railway, O/o PCSTE, S&T Dept., 5 th Floor, Station Building, Churchgate, Mumbai - 400020	
3.	Chief Engineer (Project)	GETCO, Sardar Patel Vidyut Bhavan, Race Course, Vadodara - 390007	Copy for information

I/34467/2024

ANNEXURE-I

CEA Case No.: GUJ-746 Name of the Power line: 220 kV D/C Vadavi Sanand line		Map Scale : 1 cm= 500 m Total Length : 30.54 km S.R. Value : 3000 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 IC/MBI/PTCC/GUJ-2705 Date: 20.02.2019					
1	SANAND EXCHANGE				
1A	Sanand Ex-Local—800*1P	IV less than 430 V			
2A	Sanand Ex-Local—800*1P				
3A	Sanand Ex-Local—800*1P				
4A	Sanand Ex-Local—100*1P				
5A	Sanand Ex-Local – 50*1P	0.8	0.0036	547	2
2	CHEKHLA EXCHANGE				
1B	Chekhla Exch-Local-50 P	0.9	0.0006	14473	9
2B	Chekhla Exch-Local-20P	IV less than 430 V			
3	IAWA VASNA EXCHANGE				
1C	Iawa Vasna Exch-Local-200 P	IV less than 430 V			
2C	Iawa Vasna Exch-Local-100 P				
3C	Iawa Vasna Exch-Local -50 P	0.3	0.0001	7998	1
4C	Iawa Vasna Exch-Local -20 P	IV less than 430 V			
4	KHANDERAOPURA EXCHANGE				
1D	Khanderaopura Exch - Local -100*3 P	0.75	0.0003	15313	5
2D	Khanderaopura Exch – Chandrasan -50*1 P	IV less than 430 V			
3D	Khanderaopura Exch – Nandana – 100*1 P				
5	MEDA EXCHANGE				
1E	Meda Exch – Local – 200*1 P	IV less than 430 V			

I/34467/2024

2E	Meda Exch – Kansari -50* 1 P	1	0.00045	16001	7
3E	Meda Exch – Bavlu – 20* 1 P	IV less than 430 V			
4E	Meda Exch –Agol – 100* 1 P				
6	THOL EXCHANGE				
1F	Thol Exch – Local – 200* 1 P	IV less than 430 V			
2F	Thol Exch – Local – 50* 2 P				
3F	Thol Exch – Local – 50*1 P				
4F	Thol Exch – Adhana -100* 1 P				
5F	Thol Exch – Sedpa – 100* 1 P	7.47	0.0093	15511	144
6F	Thol Exch – Jholoda – 100* 1 P	5.617	0.0316	15935	504
7	MEDA ADRAJ EXCHANGE				
1G	Meda Adraj Exch – Local – 100* 1 P	IV less than 430 V			
2G	Meda Adraj Exch – Wamaj -100* 1 P	5.756	0.00913	21584	197
3G	Meda Adraj Exch – Wadavi – 100* 1 P	5.781	0.0165	21358	352
4G	Meda Adraj Exch – Local – 50* 1 P	IV less than 430 V			
5G	Meda Adraj Exch – Local – 50* 1 P				
8	MANIPUR EXCHANGE				
1H	Manipur Exchange – Local – 200* 1 P	IV less than 430 V			
2H	Manipur Exchange – local – 50* 1 P				
3H	Manipur Exchange – Karanpura – 50* 1 P	0.2	0.00009	21175	2
9	KARNANAGAR EXCHANGE				
1I	Karannagar Ex – Local --- 200* 1 P	Outside IV consideration zone			
2i	Sanand Ex – Chhatral Highway – 100* 2 P				
10	VADSAR EXCHANGE				
1J	Vadsar Ex – Local – 200* 1 P	Outside IV consideration zone			
2J	Vadsar Ex – Dantail --- 200* 1 P				

I/34467/2024

ANNEXURE-II

CEA Case No.: GUJ-746 Name of the Power line: 220 kV D/C Vadavi Sanand line			Map Scale : 1 cm= 500 m Total Length : 30.54 km S.R. Value : 3000 Ohm-cm		
S.No.	Telecom. Details	Length of Parallelism in Km.	Mutual Coupling in Ohms.	Effective Fault current in Amps.	I.V in Volts.
WESTERN RAILWAY Letter No SG.158/28/12/1017 Date: 18.10.2019					
1	Kadi-Kalol	0.629	0.00006	27178	2
2	Ambli Road- Sanand	3.199	0.0007	13781	10
3	Sanand- Chharodi	0.7	0.00008	22352	2
4	Maraiya - Sarkhej	Out of Parallelism			
5	Balva- Maraiya	Out of Parallelism			

I/34467/2024

48

Annexure III

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)/722/

02 Feb 2018

✓ Chief Engineer (Project),
Gujarat Energy Transmission Corporation Ltd
Sardar Patel Vidyut Bhawan
Race Course, Vadodara - 390007

**PTCC PROPOSAL FOR HV/EHV TRANSMISSION LINE OF GETCO
FOR 220 KV DC LINE FROM 400KV VADAVI S/S TO PROPOSED
220KV DFCC SANAND RAILWAY S/S WITH ACSR ZEBRA
CONDUCTOR**

1. Reference your letter No CE(Project)/EE(Tr-3)/2707/ dt 04 Oct 2017.
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.

Nainee
(Nainee Sharma)
Lt Col
GSO 1 (Comn)
for SO-in-C

Copy to :-

The Director (PTCC), CEA
NREB Complex,
18-A, Shaheed Jeet Singh Marg
Katwaria Sarai, New Delhi - 110016.

- For information.

CE (ENGG)	GM (HR)/(Fin)
ACE (R&C)	ACE (Proc.)
EE (TR-II/TR-III/TR-V/Prog)	
12 FEB 2018	
SE (Proj.)	
SE (Civil)	L.O.