

I/34412/2024



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-800		
Induced Voltage (IV) calculation for PTCC proposal of 400 kV D/C Bhogat Kalavad line (125 km)- regd.		
S. No	Reference No.	Dated
(i)	GETCO: CE(Project)/SE(Planning)/912	29.07.2020
(ii)	GETCO Emai	07.03.2024
(iii)	BSNL: IC/MBI/PTCC/GJ282528342837	17.10.2020
(iv)	Western Railway: SG.158/28/12/1150	08.01.2024
(v)	Defense: B/46937/Sigs 7(b)/2130	07.12.2020

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
400 kV Kalavad S/S	111.52	28	0.28	1921.8	1233.6	13.4	NA
400 kV Bhogat S/S	155.6	28	0.11	958.9	581.7	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

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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

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ANNEXURE-I

CEA Case No.: GUJ-800 Name of the Power line: 400 kV D/C Bhogat Kalavad line		Map Scale : 1 cm= 500 m Total Length : 125 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 Letter No IC/MBI/PTCC/GJ282528342837 Date: 17.10.2020					
1	Khandera Exch				
1A	Khandera Exch to local 50 Px1,20x2,10x2	0.959	0.008	27537	220
2A	Khandera Exch to Local 50 Px1,20Px2,10Px3	0.592	0.003	27310	82
3A	Khandera Exch to Haripar 100Px1	IV less than 430V			
2	Lalai Exch				
1B	Lalai Exch To Banga 100Px1	1.6	0.0086	25381	219
2B	Lalai Exch to Local 50Px1,20Px3	IV less than 430V			
3B	Lalai Exch To Local 50Px1, 20Px3				
3	Movan Exch				
1C	Movan Exch to local 200Px1,50Px1	IV less than 430V			
2C	Movan Exch to local 100 Px1,20Px3	0.9	0.0007	15165	11
3C	Movan Exch to 50Px1,20 Px3	IV less than 430V			
4C	Movan Exch to 50 Px1,20 Px4				
4	Bhadthar Exch				
1D	Bhadthar Exch to Golansherdi 50Px1	3.526	0.0051	16814	86
2D	Bhadthar Exch to Local 200Px1,50 Px4	IV less than 430V			
3D	Bhadthar Exch to Local 50Px1,20Px3				
5	Bhatiya Exch				
1E	Bhatiya Exch to local 1200Px1,50Px4	2.23	0.001	12527	13
2E	Bhatiya Exch to local 800 Px1,400Px1,100Px1	IV less than 430V			

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3E	Bhatiya Exch to local 400 Px1,100Px1,50Px2	IV less than 430V			
5-I	Kalyanpar Exch				
1F	Kalyanpar Exch to local 200Px1, 50Px2	1.05	0.0005	4251	2
2F	Kalyanpar Exch to local 50Px2	IV less than 430V			
3F	Kalyanpar Exch to local 100Px1,50Px2				
6	Lalpur Exch				
1G	Lalpur Exch to local 800Px1,50Px2	IV less than 430V			
2G	Lalpur Exch to local 400Px1,50Px2,20Px2				
3G	Lalpur Exch to local 200Px,50Px1,20Px2	1.293	0.0018	18532	33
4G	Lalpur Exch to local 100Px150Px1,20Px2	IV less than 430V			
7	Hajipar Exch				
1H	Hajipar Exch to local 200 Px1,50Px2	IV less than 430V			
2H	Hajipar Exch to local 100Px1,50Px2	0.35	0.0002	20210	4
8	Vad Panchasara Exch				
1I	Vad Panchasara Exch to local 200Px1,50Px2	IV less than 430V			
2I	Vad Panchasara Exch to local 50Px2,20Px4	0.5	0.0015	22678	35
3I	Vad Panchasara Exch to local 20Px4	IV less than 430V			

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ANNEXURE-II

CEA Case No.: GUJ-800 Name of the Power line: 400 kV D/C Bhogat Kalavad line		Map Scale : 1 cm= 500 m Total Length : 125 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.
WESTERN RAILWAY Letter No SG.158/28/12/1150 Date: 08.01.2024					
1	Bhatel - Bhopalka	12.242	0.0011	20036	22
2	Bhopalka-Bhatiya	8.855	0.0008	23386	19
3	Bhatiya- Okha Madhi	3.648	0.00034	14781	5
4	Kanalus Jn- Lalpur Jam	2.177	0.0107	18202	195
5	Lalpur Jam – Gop Jam	7.292	0.002	16327	33

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Tele : 23019746

G.UJ-800

Annexure III

Directorate General of Signals
Signals 7
General Staff Branch
Integrated HQ of MoD, (Army)
DHQ PO, New Delhi – 110011


B/46937/Sigs 7(b)/2130/

07 Dec 2020

Chief Engineer (Project)
Gujarat Energy Transmission Corporation Ltd
Sardar Patel Vidyut Bhawan
Race Course, Vadodara – 390 007

SUBMISSION OF PROPOSALS FOR HV/EHV TRANSMISSION LINES OF GETCO FOR
PTCC APPROVAL OF 400KV D/C KALAWAD-BHOGAT LINE WITH AL-59 CONDUCTOR

1. Ref your letter No CE(Project)/SE(Planning)/917 dt 29 Jul 2020 (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 Jeeb Singh Marg
Katwaria Sarai, New Delhi – 110016

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

for information



Sh. Tansj
RPS
24.12.20