



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



No. CEA/PCD/PTCC/GUJ-760/277-279

Date: 08.07.2020

Subject: Induced Voltage calculation in respect of PTCC proposal of 220 kV D/C line from Jambuva S/S – Waghodiya S/S (PGCIL)

- Ref:** (i) BSNL letter no. IC/MBI/PTCC/GUJ-2591 dated 29.05.2019
(ii) Western Railway letter no. SG.158/28/12/ (947) dated 04.06.2019
(iii) Defense letter no. B/46937/Sigs 7(b)/1129/ dated 13.08.2018

The PTCC proposal submitted vide ref. (i) has been examined. The LF induction on telecom cables of BSNL and Block & Telecom circuits of Western Railway with respect to details furnished vide above references (i) and (ii) respectively has been computed. The Soil Resistivity (SR) value has been taken as 2500 Ohm-cm. The voltages likely to be induced on paralleling telecom cables of BSNL and Block & Telecom circuits of Western Railway under Single Line to Ground fault condition are enclosed at Annex-I and Annex-II respectively. The screening factors, as applicable, have been considered. Vide ref. (iii) above, Defense Authority have issued No Objection Certificate (NOC) (a copy enclosed as Annex-III).

Taking above into consideration, take necessary action regarding issue of PTCC route approval.

Encls.: As above.

Upendra Kumar
08/07/2020

(Upendra Kumar)
Chief Engineer

To,
Divisional Engineer (PTCC), Inspection Circle,
Bharat Sanchar Nigam Limited (BSNL),
3rd Floor, D-Wing, BSNL Admin Building
Juhu Tara Road, Santacruz (West), Mumbai-400054

Copy to:

1. GM (S&T), Western Railway, Office of CSTE, S&T Dept., 5th Floor, Station Building, Church gate, Mumbai-400020 (with Annexure-II).
2. Chief Engineer (Project), Gujarat Energy Transmission Corporation Ltd. Sardar Patel Vidyut Bhavan, Race Course, Vadodara, Gujarat-390 007.

Annexure-I

CEA Office Case No. --- 307-760		Map scale- 1 Cms = 500 Meters			
DET (PTCC) Office Case No. 2591		Route Length- 33.98 KMS			
Railway Office Case No.		Soil Resistivity- 250 Ohm/CM			
Name of Power Line: 220 KV D/C Jambuya - Waghodiya (765 PGIL) Line with Al-59 Conductor.					
DETAILS FROM BSNL SIDE		DETAILS FROM POWER COMPANY			
Sl.No.	Name of the Telecom line/Cable	Length of parameter in KM	Mutual coupling in Ohms	Fault Current in Amp	Induce Voltage in Volts
1 WAGHODIYA EXCHANGE					
1A	Waghodiya Exch. - Waghodiya Village-200+100 P				← IV less than 430V →
2A	Waghodiya Exch. -Micro -200*1+100*1 P				} ← outside IV consideration zone →
3A	Waghodiya Exch. -Highway -200+100 P				
4A	Waghodiya Exch. -Pillar -200*1 P				
5A	Waghodiya Exch. -Pillar -200*1 P				
2 WAGHODIYA EXCHANGE (RSU)					
1B	Waghodiya (R). - Local- 200*1 P				← IV less than 450V →
3 GUTALI EXCHANGE					
1C	Gutali Exch.- Local- 100*1 P				← outside IV consideration zone
4 PIPALIYA EXCHANGE					
1D	Pipaliya Exch.- local- 200*1 P				← outside IV consideration zone
5 MAKARPURA EXCHANGE					
1	Makarpura Exch.- local-1200*3+1000*1+800*7 P				← IV less than 430V →
2	Makarpura Exch.-local-1200*3+800*10+400*17 P				} ← outside IV consideration zone
3	Makarpura Exch.-local-800*4+400*17+200*30 P				
4	Makarpura Exch.-local-600*1+400*23+200*30 P				
5	Makarpura Exch.-local-200*16+100*50 P				
6	Makarpura Exch.-local-100*83+50*5 P				← IV less than 430V →
5 MANJALPUR EXCHANGE					
1	Manjalpur Exch.- Local- 1200*2P+800*4				} ← outside IV consideration zone →
2	Manjalpur Exch.- Local- 800*4P+400*10+200*10 P				
3	Manjalpur Exch.- Local- 400*8P+200*10+100*10 P				
4	Manjalpur Exch.- Local- 200*8P+100*10+50*2 P				
5	Manjalpur Exch.- Local- 100*10 P				
6	Manjalpur Exch.- Local- 100*8 P				

19K
8/7/20

मुख्य अभियंता / Chief Engineer
केंद्रीय विद्युत प्राधिकरण / C.E.A.
विद्युत मंत्रालय / Ministry of Power
भारत सरकार / Govt. of India
नई दिल्ली / New Delhi

ANNEXURE -- II

Case No.: GUJ-760
Name of the Power line: 220 kV D/C line from Jambuva S/S to Waghodiya S/S (PGCIL)

Map Scale : 1cm=500mts
Total Length : 33.98 km
S.R. Value : 2,500 Ohms-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 (947) dated 04.06.2019					
Affected Blocks & Telcom Circuits Details					
1	Jambusar - Pratapnagar	---outside IV consideration zone---			0
2	Pratapnagar -- Dabhoi	1.3	0.0018	7900	14
3	Vadodara -- Vishwamitri	---outside IV consideration zone---			0
4	Vishwamitri - Makarpura				0
5	Makarpura -- Varnama				0

Ux
8/7/2020

मुख्य अभियंता/Chief Engineer
केन्द्रीय विद्युत प्राधिकरण/C.E.A.
विद्युत मंत्रालय/Ministry of Power
भारत सरकार/Govt. of India
नई दिल्ली/New Delhi

Annexure-19

GUS-760

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)/1129/

13 Aug 2018

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

220 KV D/C JAMBUVA - WAGHODIYA (765KV PGCIL) LINE, Ta. DABHOI, DIST
VADODARA

1. Ref your letter No CE (Project)/EE (Tr.3)/4701 dt 26 Apr 2018 (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 forwarded herewith for your further action.



(A Rawat)
Maj
GSO 1 (Comn)
for SO-in-C

Enclosures : (As above)

Copy to :-

The Director, PTCC
Central Electricity Authority,
NRPC Complex,
18A - Shaheed Jeet Singh Marg,
Katwaria Sarai, New Delhi - 110016

for information please.