



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**  
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<b>CEA Case No. : GUJ-913</b>		
<b>Induced Voltage (IV) Calculation for PTCC proposal of LILO of both circuits of 400 kV D/C Pirana (PG) – Pirana (T) at 765 kV Ahmedabad S/s (Length: 60.654 km)</b>		
<b>S. No</b>	<b>Reference No.</b>	<b>Dated</b>
(i)	TGPL/400kV LILO/PTCC/041/2024 (received on 28.11.2024)	25.10.2024
(ii)	E-mail	06.06.2025
(iii)	BSNL: No. IC/MBI/PTCC/GUJ-3013	11.02.2025
(iv)	Western Railway: SG.158/28/12/1436	16.12.2024
(v)	Defense: B/46937/Sigs 7(b)/4310	24.01.2025

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 references (iii) and (iv) respectively has been computed. The voltage likely to be induced on paralleling communication cables of Western Railway under Single Line to Ground fault condition are enclosed at Annexure-I. The screening factors as applicable have been considered. DET (PTCC), WZ, BSNL vide reference (iii) and ADG (Telecom), MoD vide reference (v) has given their NOC for charging the line.

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
765/400 kV Jolapur, Ahmedabad S/s	437.4	44.1	0.16	6740	4311	3	NA

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 111<sup>th</sup> and 112<sup>th</sup> CLPTCC meeting, necessary instructions for “Deemed Energization approval” shall be specified while issuing RAC.

Encl.: As above

**Chief Engineer**

**To,**

1.	Divisional Engineer (PTCC), Western Zone	QA & Inspection circle, 1 <sup>st</sup> floor, D- wing, BSNL Admin Bldg., Junu Tara Road, Santacruz (West), Mumbai-400054	
2.	GM (S&T), Western Railway	S&T Department, 5 <sup>th</sup> Floor, Station Building, Church Gate, Mumbai – 400 020	
3.	M/s Torrent Power Grid Limited	Samanvay, 600, Tapovan, Ambawadi, Ahmedabad – 380 015	Copy for information

**ANNEXURE-I**

<b>CEA Case No.: GUJ-913</b>		<b>Map Scale</b> : 1 cm= 500 m			
<b>Name of the Power line:</b> LILO of both circuits of 400 kV D/C Pirana (PG) – Pirana (T) at 765 kV Ahmedabad S/s (Length: 60.654 km)		<b>Total Length</b> : 60.654 km			
		<b>S.R. Value</b> : 25000 Ohm-cm			
<b>S.No.</b>	<b>Telecom. Details</b>	<b>Length of Parallelism in Km.</b>	<b>Mutual Coupling in Ohms.</b>	<b>Effective Fault current in Amps.</b>	<b>I.V in Volts.</b>
<b>BSNL: No. IC/MBI/PTCC/GUJ-3013 Date: 11.02.2025</b>					
<b>I</b>	<b>Vasna Exchange</b>				
1A	Vasna Exch.-Local- 1200 * 3 + 800*8 + 400*4 + 200*4+100*5				
2A	Vasna Exch.-Local-1200*1 + 800*1 + 400*2 + 200*3 + 100*5				
3A	Vasna Exch.-Local-800*1 + 400*2 + 200*2 + 100*3				
4A	Vasna Exch.-Local-1200*2 + 800*1 + 400*2 + 200*2 + 100*4				
5A	Vasna Exch.-Local-1200*1 + 800*1 + 400*1 + 200*1 + 100*2				
6A	Vasna Exch.-Local-1200*2 + 800*1 + 400*3 + 200*2 + 100*4				
7A	Vasna Exch.-Local-1200*2 + 800*1 + 400*2 + 200*2 + 100*3				
8A	Vasna Exch.-Local-1200*4 + 800*2 + 400*3 + 200*3 + 100*4				
9A	Vasna Exch.-Local-1200*5 + 800*2 + 400*4 + 200*2 + 100*4				
10A	Vasna Exch.-Local-100*2+50*3				
11A	Vasna Exch.-Local-1200*2 + 1000*1 + 400*2 + 200*2 + 100*3				
12A	Vasna Exch.-Local-1200*1 + 400*2 + 200*2 + 100*3				
13A	Vasna Exch.-Local-1200*2 + 800*1 + 400*2 + 200*1 + 100*3				
14A	Vasna Exch.-Local-1200*3 + 800*2 + 400*3 + 200*3 + 100*4				
Out of parallelism					

15A	Vasna Exch.-Local-1200*3 + 800*2 + 400*3 + 200*3 + 100*4				
16A	Vasna Exch.-Local-1200*1 + 800*1 + 400*2 + 100*3				
17A	Vasna Exch.-Local-1200*3 + 800*2 + 400*3 + 200*2 + 100*4				
18A	Vasna Exch.-Local-1200*1 + 800*1 + 200*2 + 100*3				
19A	Vasna Exch.-Local-1200*1 + 800*2 + 200*1 + 100*3				
<b>II</b>	<b>Vejalpur Exchange</b>				
1B	Vejalpur Exch.-Local-1200*8 + 800*8 + 400*8 + 100*8 + 50*8	IV less than 430 V			
2B	Vejalpur Exch.-Local-1200*6 + 800*2 + 200*8 + 100*4 + 50*4				
3B	Vejalpur Exch.-Local-1200*2 + 800*5 + 200*5 + 100*4 + 50*4				
4B	Vejalpur Exch.-Local-800*1 + 400*3 + 200*3 + 100*4 + 50*3				
<b>III</b>	<b>Sarkhej Exchange</b>				
1C	Sarkhej Exch.-Local-400*2 + 200*4 + 100*5 + 50*4	Out of parallelism			
<b>IV</b>	<b>Bhat Exchange</b>				
1D	Bhat exch. - Caila Health - 50* 1 P	Out of parallelism			

**ANNEXURE-II**

<b>CEA Case No.: GUJ-913</b>		<b>Map Scale : 1 cm= 500 m</b>			
<b>Name of the Power line:</b> LILO of both circuits of 400 kV D/C Pirana (PG) – Pirana (T) at 765 kV Ahmedabad S/s (Length: 60.654 km)		<b>Total Length : 60.654 km</b>			
		<b>S.R. Value : 25000 Ohm-cm</b>			
<b>S.No.</b>	<b>Telecom. Details</b>	<b>Length of Parallelism in Km.</b>	<b>Mutual Coupling in Ohms.</b>	<b>Effective Fault current in Amps.</b>	<b>I.V in Volts.</b>
<b>Western Railway: SG.158/28/12/14361 Date: 16.12.2024</b>					
1	Gandhigram to Sarkhej	Out of IV consideration zone			
2	Sarkhej to Moraiya	4	0.000645	9302	6
3	Moraiya to Bavla	5.1	0.0006	8333	5
4	Bavla to Dholka	7	0.00844	12441	105
5	Dholka to Koth Gangad	Out of parallelism			