



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-983		
Induced Voltage (IV) calculation for PTCC proposal of 220 kV S/C transmission line from Wankaner GIS SS to 220 kV Wankaner Railway TSS switchyard partly underground, partly OH using ACSR conductor and partly by hot line stringing on spare circuit of existing 220 kV DC on MC towers Wankaner – Lalpar and Wankaner – Sartanpar line (Length: 1.28 km) [OH – 0.45 km + HLS – 0.3km, UG - 0.53km]- regd.		
S. No	Reference No.	Dated
(i)	GETCO: CE(Project)/EE(TR-II)/T-5/3775/942	04.07.2025
(ii)	Undertaking for Provisional PTCC	10.12.2025
(iii)	BSNL: IC/MBI/PTCC/Offline/GJ-3090	21.07.2025
(iv)	Western Railway: SG.158/28/12/1548	06.08.2025

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 reference (iii) and (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 and Annexure -II respectively. The screening factors as applicable have been considered.

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 Railway TSS Wankaner	56	24.164	0.4	1201	775	21	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.

Telecommunication details from Defense are pending and the power utility has shown urgency for charging of the line and requested for provisional PTCC approval vide above reference (ii). Taking above into consideration, necessary action for issuance of provisional 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 111th and 112th CLPTCC meeting, necessary instructions for “*Deemed Energization approval*” shall be specified while issuing provisional RAC.

Encl.: As above

Chief Engineer

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, Church gate, Mumbai - 400020	
3.	Chief Engineer (Project)	GETCO, Sardar Patel Vidyut Bhavan, Race Course, Vadodara - 390007	Copy for information

ANNEXURE-I

CEA Case No.: GUJ-983 Name of the Power line: 220 kV S/C transmission line from Wankaner GIS SS to 220 kV Wankaner Railway TSS switchyard			Map Scale : 1 cm= 500 m Total Length: 1.28 km S.R. Value: 15000 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/Offline/GJ-3090 Date: 21.07.2025					
WANKANER EXCHANGE					
1	Wankaner Exg – Local 400X1P	Out of Parallelism			

ANNEXURE-II

CEA Case No.: GUJ-983			Map Scale: 1 cm= 500 m		
Name of the Power line: 220 kV S/C transmission line from Wankaner GIS SS to 220 kV Wankaner Railway TSS switchyard			Total Length: 1.28 km		
			S.R. Value: 15000 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.158/28/12/1548 Date: 06.08.2025					
1.	Makansar – Wankaner	0.25	0.00006	19250	1
2.	Wanknaer – Lunsariya	1.1	0.0047	14736	69
3.	Lunsariya – Daladi	Out of Parallelism			
4.	Wankaner – Amarsar				
5.	Amarsar - Sindhavadar	Outside IV consideration zone			