



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

CEA Case No. : RAJ-749		
Induced Voltage (IV) calculation for PTCC proposal of LILO of 220 kV S/C Bhilwara - Beawer Transmission Line at 220 kV Raila S/s [Length- 12.54 km]– Regd.		
S. No	Reference No.	Dated
(i)	RRVPNL: RVPN/SE(QC,Insp.&Montg.)/XEN(PTCC)/F.2015-A-00241-RajkajNo-8201389	20.06.2024
(ii)	RRVPNL: e-Mail	24.04.2025
(iii)	BSNL: DE/PTCC/NZ/ BSNL-TD/DV-10397/RAJ-1496/2024-25	06.12.2024
(iv)	North Western Railway: SG/158/NWR/PTCC/977	02.07.2024
(v)	Defense: B/46937/Sigs7(b)/4012	06.11.2024

The PTCC proposal submitted vide reference (i) and (ii) has been examined. The LF induction on Block and Telecom circuits of North Western Railway with respect to details furnished vide above reference (iv) has been computed. The voltage likely to be induced on paralleling Block and Telecom circuits of North Western Railway under Single Line to Ground fault condition are enclosed at Annexure-I. The screening factors as applicable have been considered. DET-PTCC, NZ BSNL and DG Signals, MoD has issued No Objection Certificate (NOC) vide reference (iii) & (v) respectively.

EPR zone for proposed S/S is mentioned below:

Name of the proposed Substation	Half diagonal distance , D/2 (mts)	Fault Current I (KA)	Resistance of Earth Mat, R (ohms)	d (mts) at 430 V	d (mts) at 650 V	d (mts) at 7kV	d (mts) at 10kV
220 kV Raila S/s	106	25	0.257	1478	942	N.A	N.A

As per the Telecom Details submitted by BSNL vide above reference (iii), no telephone exchange of BSNL is falling within the EPR zone of proposed Substation.

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

Chief Engineer

To,

1.	Divisional Engineer (PTCC), Northern Zone	BSNL, O/o GM (North), QA & Inspection Circle D-Tax Building, Eastern Court, Janpath New Delhi-110001	
2.	GM (S&T) NWR	North Western Railway, Headquarter Office, Room No. 136, First Floor, Near Jawahar Circle, Jaipur - 302017	
3.	S.E (QC, Ins.& Montg.)	O/o S.E (QC, Ins.& Montg.) Vidyut Bhawan, Jaipur	Copy for information.

ANNEXURE-I

CEA Case No.: RAJ-749			Map Scale : 1 cm= 500 m		
Name of the Power line: LILO of 220 kV S/C Bhilwara - Beawer Transmission Line at 220 kV Raila S/s			Total Length: 12.54 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.

North Western Railway: SG/158/NWR/PTCC/977

Dated 02.07.2024

Affected Blocks & Telecom Circuits Details

1.	Rupaheli R/s to Sareri R/s	Out of Parallelism			
2.	Sareri R/s to Railaroad R/s	Out of Parallelism			
3.	Railaroad R/s to Lambia R/s	3.5	0.014	19200	268
4.	Lambia R/s to Dhuwala R/s	5.0	0.0017	16500	119
5.	Dhuwala R/s to Mandal R/s	Out of Parallelism			