



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. : HRA-256</b>		
<b>Induced Voltage (IV) Calculation for PTCC proposal of LILO of one circuit of 220 kV D/C Nissing – Saleempur transmission line at 220 kV Ramana-Ramani Substation (Length: 8.547 kms).</b>		
<b>S. No</b>	<b>Reference No.</b>	<b>Dated</b>
(i)	Ch-51/EST-41/220	09.09.2024
(ii)	BSNL: DE/PTCC/ND/DV-10400/HR-889/2023-24	21.09.2024
(iii)	Northern Railway: 342-SIG/1/PTCC/2024-25/09/04	23.09.2024
(iv)	Defense: B/46937/Sigs 7(b)/4164	17.01.2025

The PTCC proposal submitted vide reference (i) has been examined. The LF induction on communication circuits of Northern Railway with respect to details furnished vide above reference (iii) has been computed. The voltages likely to be induced on paralleling communication cables of Northern 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 vide reference (ii) and DG Signals, MoD vide reference (iv) have 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
220 kV Ramana-Ramani Substation	156.7	28	0.121	1078	660	NA	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), Northern Zone	BSNL, O/o PGM(North), QA & Inspection Circle D-Tax Building, Eastern Court, Janpath New Delhi-110001
2.	GM (S&T)	Northern Railway, Baroda House, New Delhi
3.	Executive Engineer	Transmission System Division, HVPNL, Karnal

**ANNEXURE-I**

<b>CEA Case No.: HRA-256</b> <b>Name of the Power line:</b> LILO of one circuit of 220 kV D/C Nissing – Saleempur transmission line at 220 kV Ramana-Ramani Substation			<b>Map Scale</b> : 1 cm= 500 m <b>Total Length</b> : 8.547 km <b>S.R. Value</b> : 20000 Ohm-cm		
S.No.	Telecom. Details	Length of Parallelism in Km.	Mutual Coupling in Ohms.	Effective Fault current in Amps.	I.V in Volts.
<b>Northern Railway: 342-SIG/1/PTCC/2024-25/09/04 Date: 23.09.2024</b>					
1.	Amin R/S to Nilo Kheri R/S	Out of IV consideration zone			
2.	Nilo Kheri R/S to Taraori R/S	Out of IV consideration zone			
3.	Taraori R/S to Bhaini Khurd R/S	Out of parallelism			
4.	Bhaini Khurd R/S to Karnal	Out of parallelism			