



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. : RAJ-721		
Induced Voltage (IV) calculation for PTCC proposal of LILO of 765 kV S/C Meerut-Bhiwani line at Narela SS(34.321 km)- regd.		
S. No	Reference No.	Dated
(i)	PGCIL: NR-I/PNTL/LILO of Meerut-Bhiwani/PTCC/TW03/92	26.06.2023
(ii)	PGCIL E-mail	28.05.2024
(iii)	BSNL: DET/PTCC/ND/DV-10237/Raj-1429/2023-2024/	07.08.2023
(iv)	Northern Railway: 342-SIG/1/PTCC/2023-24/11/03	06.11.2023
(v)	Defense: B/46937/Sigs 7(b)/3518	17.11.2023

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

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 kV Narela SS	239	44.1	0.069	1452	880	NA	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.

Taking above into consideration, necessary action for issuance of PTCC route approval may be taken under intimation to this office.

Encl.: As above

Chief Engineer

To,

1.	Divisional Engineer (PTCC), Northern Zone	BSNL O/o PGM (N), QA & Inspection Circle, D-Tax Building, Eastern Court, Janpath, New Delhi 110001	
2.	GM/S&T	Northern Railway, Headquarter Office, Baroda House, New Delhi	
3.	Executive Director (NR-I), POWERGRID	POWERGRID RHQ, NR-I, Faridabad	Copy for information

ANNEXURE-I

CEA Case No.: RAJ-721 Name of the Power line: LILO of 765 kV S/C Meerut- Bhiwani line at Narela SS			Map Scale : 1 cm= 500 m Total Length : 34.321 km S.R. Value : 5000 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.- DET/PTCC/ND/DV-10237/Raj-1429/2023-2024/ Date: 07.08.2023					
1	Hullaheri to Mahra	6.97	0.086	22221	1911
2	Sonipat to Mohana	6.046	0.0027	10061	27
3	Sonipat to Farmana	6.669	0.003	13038	39
4	Sonipat to Kharda	1.746	0.02	19409	388
5	Sonipat to Kharkhoda	2.216	0.012	16789	201
6	Sonipat to Khorkhoda	2.36	0.0047	10127	47
7	Harsana to Garhi Bala	0.783	0.0205	19586	401
8	Malha Mazra to Nahri	1.591	0.072	25722	1852
9	Halapur to Jhinjoli	2.26	0.035	31840	1114
10	Kharkhoda to Saidpur	0.829	0.0004	954	0.4
11	Kharkhoda to Sohti	IV less than 430V			
12	Khanda to Noklai	Outside IV consideration zone			
13	Kailana to Dubhita	Out of Parallelism			
14	Pullchas to Khubru				
15	Panchi Jattan to Gaanour	IV less than 430V			
16	Bhigm to Gannour				
17	Sonipat to Gannour				
18	Sonipat to Murthal				
19	Sonipat to Bahalgarh				
20	Rai to Seoli	Out of Parallelism			

21	SPT to Shahpur Taluk	IV less than 430V			
22	SPT to Fazilpur	IV less than 430V			
23	Bawana to Qutubgarh	3.117	0.0326	32221	1050
24	Bawana to Harewali	IV less than 430V			
25	Bawana to Auchandi	IV less than 430V			

ANNEXURE-II

CEA Case No.: RAJ-721 Name of the Power line: : LILO of 765 kV S/C Meerut- Bhiwani line at Narela SS		Map Scale : 1 cm= 500 m Total Length : 34.321 km S.R. Value : 5000 Ohm-cm			
S.No.	Telecom. Details	Length of Parallelism in Km.	Mutual Coupling in Ohms.	Effective Fault current in Amps.	I.V in Volts.
Northern RAILWAY Letter No.- 342-SIG/1/PTCC/2023-24/11/03 Date: 06.11.2023					
1	Badli to Holambi Kalan	Outside IV Consideration zone			
2	Holambi Kalan to Narela	0.826	0.00007	1507	~0
3	Narela to Rathdhana	4.458	0.0004	29588	12
4	Rathdhana to Sonipat	10.596	0.0011	25247	28
5	Sonipat to Sandal Kalan	5.915	0.0006	14164	8
6	Sandal Kalan to Ganaur	3.666	0.00033	6081	2
7	Ganaur to Bhodwal Majri	Outside IV Consideration zone			
8	Bhodwal Majri to Samalkha				