

I/34109/2024



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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CEA Case No. : HRA-227		
Induced Voltage (IV) calculation for PTCC proposal of 220 kV D/C Line from 400 kV Naggal (PG) S/S to 220 kV S/s at Sector 32, Panchkula [Length-21.787 km]-Regd.		
S. No	Reference No.	Dated
(i)	HVPNL: Ch-30/TSD/CW-91/Vol-I	17.09.2019
(ii)	HVPNL: 31/HVPLG/197	19.12.2023
(iii)	HVPNL: e-mail	27.02.2024
(iv)	BSNL: DET/PTCC/ND/DV-10297/HRA-881/2023-24	16.02.2024
(v)	Northern Railway: 342-SIG/1/PTCC/2023-24/02/01	06.02.2024
(vi)	Defense: B/4693/Sigs7(b)/1844	21.10.2020

The PTCC proposal submitted vide reference (i), (ii) & (iii) has been examined. The LF induction on Block and Telecom circuits of Northern Railway submitted vide reference (v) has been computed. The voltage likely to be induced on paralleling Block and Telecom circuits 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 and DG Signals, MoD have issued No Objection Certificate (NOC) vide reference (iv) & (vi) respectively.

EPR zone for the proposed substation 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 Sector 32, Panchkula Ss	112	24	0.21	1201	756	NA	NA

As per the details submitted by BSNL vide reference (iv) above, no telephone exchanges are falling in the EPR zone of the proposed substation.

Taking above into consideration, necessary action regarding issuance of PTCC approval for the subject cited transmission line might be taken under intimation to this office.

Encl.: As above

**Chief Engineer**

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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	Annexure-I
4.	Ex. Engineer (Planning)	HVPNL, Panchkula	Copy for information.

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ANNEXURE-I

CEA Case No.: HRA-227			Map Scale : 1 cm= 500 m		
Name of the Power line: 220 kV D/C Line from 400 kV Naggal (PG) S/S to 220 kV S/s at Sector 32, Panchkula			Total Length : 21.787 km		
			S.R. Value : 10000 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/2023-24/02/01 Dated 06.02.2024

Affected Blocks & Telecom Circuits Details

1	Dhapper R/s to Ghaggar R/s	Out of parallelism			
2	Ghaggar R/s to Chandigarh R/s	0.5	0.000045	22223	1
3	Chandigarh R/s to Chandi Mandir R/s	Out of parallelism			
4	Chandigarh R/s to Sahibzada Ajit Singh Nagar R/s	Out of parallelism			