



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.: BHR-205		
Induced Voltage (IV) calculation for PTCC proposal of 220 kV D/C Kishanganj New to Thakurganj Transmission Line [Length- 47.511 km]– Regd.		
Reference:		
S. No.	Reference No.	Dated
(i)	BSPTCL Letter No: Tele/PTCC/10/2024/125	06.09.2024
(ii)	BSPTCL: e-Mail	27.02.2025
(iii)	BSNL: DE/ER/PTCC/EBR200920246215/CEA/01 (Received on 25.02.2025)	10.01.2025
(iv)	North Frontier Railway : N/146/2/10Pt.VIII(TC)	27.01.2025
(v)	Defense : B/46937/Sigs 7(b)/4168	06.11.2024

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

EPR zone for 220 kV proposed S/stn 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 Thakurganj S/stn	135	27.2	0.116	826	501	NA	NA

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 regarding issuance of PTCC approval for the subject cited transmission line shall be taken under intimation to this office.

Chief Engineer

To,

1.	Divisional Engineer (PTCC), Eastern Zone	BSNL QA & Inspection Circle, QA Bhawan, EP-GP Block, Sector-V, Kolkata	
2.	General Manager (S&T)	O/o GM (S&T) North Frontier Railway, Maligaon	
3.	Chief Engineer (Telecom & OPGW)	Bihar State Power Transmission Co. Ltd. 4 th Floor, Vidyut Bhawan, Patna	Copy for information

ANNEXURE-I

CEA Case No.: BHR-205 Name of the Power line: 220 kV D/C Kishanganj New to Thakurganj Transmission Line			Map Scale : 1 cm= 500 m Total Length : 47.511 km S.R. Value : 5000 Ω -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 : DE/ER/PTCC/EBR200920246215/CEA/01 Date 10.01.2025					
<u>Affected Blocks & Telecom Circuits Details</u>					
1	Nearest Location A.P.1				IV computation is not required on Tower and Exchanges.
2	Nearest Location A.P.4				
3	Nearest Location A.P.40				
4	Nearest Location A.P.23/0				
5	Nearest Location A.P.51/0				

ANNEXURE-II

CEA Case No.: BHR-205 Name of the Power line: 220 kV D/C Kishanganj New to Thakurganj Transmission Line			Map Scale : 1 cm= 500 m Total Length : 47.511 km S.R. Value : 5000 Ω -cm		
S.No.	Telecom. Details	Length of Parallelism in Km.	Mutual Coupling in Ohms.	Effective Fault current in Amps.	I.V in Volts.
North Frontier Railway : N/146/2/10Pt.VIII(TC) Date: 27.01.2025					
<u>Affected Blocks & Telecom Circuits Details</u>					
1	Thakurganj R/s to Pawakhali R/s	6.0	0.0118	18200	215
2	Thakurganj R/s to Aluabari R/s	-Out of Parallelism-			
3	Thakurganj R/s to Adhikari R/s	-Out of Parallelism-			