



सत्यमेव जयते

भारत सरकार

Government of India

विद्युत मंत्रालय

Ministry of Power

केन्द्रीय विद्युत प्राधिकरण

Central Electricity Authority

विद्युत संचार विकास प्रभाग

Power Communication Development Division

CEA Case No.: BHR-192		
Induced Voltage (IV) calculation for PTCC proposal of LILO of 400 kV D/C Barh-Patna Transmission Line at Bakhtiyarpur S/S (LOOP-OUT)[Length- 10.3 km]- Regd.		
Reference:		
S. No.	Reference No.	Dated
(i)	BSPTCL Letter No: Tele/PTCC/20/2021/145	04.03.2022
(ii)	BSPTCL Letter No: Tele/PTCC/26/2021/120	27.06.2023
(iii)	BSNL: DET/PTCC/ER/EBR221020213583/IV/1	08.06.2023
(iv)	East Central Railway : ECR-HQ0SnT(CPTC)/1/2020-O/oDy.CSTE/HQ/ECR/2058	23.02.2022
(v)	Defense : B/46937/Sigs 7(b)/2588	09.11.2021

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

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
400/220/132kV Bakhtiyarpur S/S	166	63	0.143	3312	2135	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 regarding issuance of PTCC approval for the subject cited transmission line might be taken under intimation to this office.

Encl.: As above.

(Suman Kumar Maharana)
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) East Central Railway Hajipur	
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-192			Map Scale : 1 cm= 500 m		
Name of the Power line: LILO of 4000 kV D/C Barh-Patna Transmission Line at Bakhtiyarpur S/S (LOOP-OUT)			Total Length : 10.3 km		
			S.R. Value : 7500 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: DET/PTCC/ER/EBR221020213583/IV/1 Date: 08.06.2023					
<u>Affected Blocks & Telecom Circuits Details</u>					
1	BSNL main Barh Telephone Exchange from near AP-14 400 kV Loop in Line.		IV Calculation not required (Telephone Exchange)		
2	BSNL main Barh Telephone Exchange hospital mor from near AP-14 400 kV Loop in Line.		IV Calculation not required (Telephone Exchange)		
3	BSNL main Barh Telephone Exchange NTPC from near AP-15 400 kV Loop in Line.		IV Calculation not required (Telephone Exchange)		

ANNEXURE-II

CEA Case No.: BHR-192			Map Scale : 1 cm= 500 m		
Name of the Power line: LILO of 4000 kV D/C Barh-Patna Transmission Line at Bakhtiyarpur S/S (LOOP-OUT)			Total Length : 10.3 km		
			S.R. Value : 7500 Ω-cm		
S.No.	Telecom. Details	Length of Parallelism in Km.	Mutual Coupling in Ohms.	Effective Fault current in Amps.	I.V in Volts.
East Central Railway Letter No: ECR-HQ0SnT(CPTC)/1/2020-O/oDy.CSTE/HQ/ECR/2058 Date: 23.02.2022					
<u>Affected Blocks & Telecom Circuits Details</u>					
1	Athmalgola to Barh	1.5	0.0004	32640	13
2	Barh to Punarakh	-Out of Parallelism-			