

I/28809/2023



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-184		
Induced Voltage (IV) calculation for PTCC proposal of LILO of 400 kV D/C Barh-Patna Transmission Line at Bakhtiyarpur S/S (LOOP-IN)[Length- 10.452 km]- Regd.		
Reference:		
S. No.	Reference No.	Dated
(i)	BSPTCL Letter No: Tele/PTCC/20/2021/383	27.09.2021
(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/2057	18.02.2022
(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 paralleling 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

I/28809/2023 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-184		Map Scale : 1 cm= 500 m			
Name of the Power line: LILO of 400 kV D/C Barh-Patna Transmission Line at Bakhtiyarpur S/S (LOOP-IN)		Total Length : 10.452 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)			

I/28809/2023

ANNEXURE-II

CEA Case No.: BHR-184			Map Scale : 1 cm= 500 m		
Name of the Power line: LILO of 400 kV D/C Barh-Patna Transmission Line at Bakhtiyarpur S/S (LOOP-IN)			Total Length : 10.452 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/2057 Date: 18.02.2022					
<u>Affected Blocks & Telecom Circuits Details</u>					
1	Bakhtiyarpur to Athmalgola			-Out of Parallelism-	
2	Athmalgola to Barh			-Out of Parallelism-	
3	Barh to Punarakh			-Out of Parallelism-	