



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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<b>CEA Case No. : MP-523</b>		
<b>Induced Voltage (IV) calculation for PTCC proposal of LILO (Line-A) of both circuits of 220 kV D/C Sidhi – Hindalco at 220 kV Bargawan S/s (Length: 2.206 kms) – regd.</b>		
<b>S. No</b>	<b>Reference No.</b>	<b>Dated</b>
(i)	MPPTP2L/JBP/PTCC/531	22.03.2024
(ii)	MPPT2PL E-mail	05.08.2024
(iii)	BSNL: IC/MBI/PTCC/MP	04.07.2024
(iv)	West Central Railway: WCR/N-HQ/120 PTCC-T-5—Pt-III Caes-414	03.05.2024
(v)	Defense: B/46937/Sigs 7(b)/3841	21.05.2024

The PTCC proposal submitted vide reference (i) and (ii) has been examined. The LF induction on communication circuits of BSNL and West Central Railway with respect to details furnished vide above references (iii) and (iv) respectively have been computed. The voltage likely to be induced on paralleling communication cables of BSNL and West Central Railway under Single Line to Ground fault condition are enclosed at Annexure-I and Annexure-II respectively. The screening factors as applicable have been considered.

DG Signals, MoD have issued No Objection Certificate (NOC) vide reference (v).

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
220 kV Bargawan S/s	105.54	37	0.1048	846	524	NA	NA

As per the details submitted by BSNL vide reference (iii) above, no telephone exchange is falling in the EPR zone of the proposed substations.

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

**Chief Engineer**

**To,**

1.	Divisional Engineer (PTCC), Western Zone	QA & Inspection circle, 1 <sup>st</sup> floor, D- wing, BSNL Admin Bldg., Junu Tara Road, Santacruz (West), Mumbai-400054	
2.	GM (S&T) , West Central Railway	1 <sup>st</sup> Floor, Annex II building, P. F. No. 6, Jabalpur	
3.	MP Power Transmission Package- II Limited	House No.- 5/1006, Near Nachiketa School, Vijay Nagar, Jabalpur – 482 002	Copy for information

**ANNEXURE-I**

<b>CEA Case No.: MP-523</b>			<b>Map Scale : 1 cm= 500 m</b>		
<b>Name of the Power line:</b> LILO (Line-A) of both circuits of 220 kV D/C Sidhi – Hindalco at 220 kV Bargawan S/s			<b>Total Length : 2.206 kms</b>		
			<b>S.R. Value : 7,500 Ohm-cm</b>		
<b>S.No.</b>	<b>Telecom. Details</b>	<b>Length of Parallelism in Km.</b>	<b>Mutual Coupling in Ohms.</b>	<b>Effective Fault current in Amps.</b>	<b>I.V in Volts.</b>
<b>BSNL: IC/MBI/PTCC/MP Date: 04.07.2024</b>					
1.	C1 – Underground UG cable (copper)		Out of parallelism		
2.	C2 – Underground UG cable (copper)		Out of parallelism		
3.	C3 – Underground UG cable (copper)		Out of parallelism		

**ANNEXURE-II**

<b>CEA Case No.: MP-523</b>					
<b>Name of the Power line:</b> LILO (Line-A) of both circuits of 220 kV D/C Sidhi – Hindalco at 220 kV Bargawan S/s		<b>Map Scale</b> : 1 cm= 500 m <b>Total Length</b> : 2.206 kms <b>S.R. Value</b> : 7,500 Ohm-cm			
<b>S.No.</b>	<b>Telecom. Details</b>	<b>Length of Parallelism in Km.</b>	<b>Mutual Coupling in Ohms.</b>	<b>Effective Fault current in Amps.</b>	<b>I.V in Volts.</b>
<b>West Central Railway: WCR/N-HQ/120 PTCC-T-5—Pt-III Caes-414 Date: 03.05.2024</b>					
1	Deoragarm to Majhouli	Out of parallelism			
2	Majhouli to Bargawan	0.35	~0	23854	~0
3	Bargawan to Gondawali	Out of parallelism			