



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. : MP-494		
Induced Voltage (IV) calculation for LILO of one circuit of 220 kV DCDS Transmission Line from 400 kV Chhegaon S/s to 220/33 kV Saktapur PSS at 220 kV Chitramod S/s of RUMS [Length- 23.686 km]– Regd.		
S. No	Reference No.	Dated
(i)	MPPTCL: 04-02/PTCC/2704/STU-II/1768	01.08.2022
(ii)	MPPTCL: e-Mail	09.07.2024
(iii)	BSNL: DET/PTCC/WR/2021-22/MP-782	19.11.2022
(iv)	Western Railway: SG.158/28/10/L-265 (E-227783)	31.10.2022
(v)	Defense: B/46937/Sigs7(b)/2977	26.09.2022

The PTCC proposal submitted vide reference (i) & (ii) has been examined. The LF induction on Block and Telecom circuits of BSNL & Western 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 & Western 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/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
220 kV Chitramod S/s	128	5.02	2.2	3160	2047	74	13

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 may be taken under intimation to this office.

Encl.: As above

Chief Engineer

To,

1.	Divisional Engineer (PTCC), Western Zone	QA & Inspection circle, 1 st floor, D- wing, BSNL Admin Bldg., Junu Tara Road, Santa Cruz (West), Mumbai-400054	
2.	GM (S&T) Western Railway	O/o CSTE, Station Building Churchgate, Mumbai	
3.	Chief Engineer (Plng. & Design) MPPTCL	Block No.2, Shakti Bhawan Rampur, Jabalpur	Copy for information.

ANNEXURE-I

CEA Case No.: MP-494			Map Scale : 1 cm= 500 m		
Name of the Power line: LILO of one circuit of 220 kV DCDS Transmission Line from 400 kV Chhegaon S/s to 220/33 kV Saktapur PSS at 220 kV Chitramod S/s of RUMS.			Length : 38.55 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.

BSNL Letter No: DET/PTCC/WR/2021-22/MP-782 Dated 19.11.2022

Affected Blocks & Telecom Circuits Details

1	Nimarkhedi Exchange A to B & A to C	IV Less than 430 V
2	Dashyaon Exchange A to B & A to C	
3	Bhairukheda Exchange A to B , A to C & A to D	
4	Gorul Exchange A to B & A to C	
5	Kalmakhi Exchange A to B & A to C	

ANNEXURE-II

CEA Case No.: MP-494			Map Scale : 1 cm= 500 m		
Name of the Power line: LILO of one circuit of 220 kV DCDS Transmission Line from 400 kV Chhegaon S/s to 220/33 kV Saktapur PSS at 220 kV Chitramod S/s of RUMS.			Length : 38.55 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.

Western Railway Letter No: SG.158/28/10/L-264 (E-227783) Dated 31.10.2022

Affected Blocks & Telecom Circuits Details

1	Barawaha R/s to Omkareshwar Road R/s	-Out of Parallelism-			
2	Omkareshwar Road R/s to Sanawad R/s	-Out of Parallelism-			
3	Sanawad R/s to Nimar Kheri R/s	5.0	0.00065	15200	9
4	Niramkheri R/s to Kotlakhel R/s	-Out of Parallelism-			
5	Kotlakhel R/s to Atar R/s	-Out of Parallelism-			
6	Atar R/s to Sirran (D) R/s	-Out of Parallelism-			
7	Sirran (D) R/s to Ajanti R/s	-Out of Parallelism-			