सत्यमेव जयते

भारत सरकार
Government of India
विद्युत मंत्रालय
Ministry of Power
केन्द्रीय विद्युत प्राविकरण
Central Electricity Authority
विद्युत प्रणाली संचार विकास प्रभाग
Power System Communication Development Division
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CEA Case No. : MP-513		
Induced Voltage (IV) calculation for PTCC proposal of 220 kV S/C Transmission Line from 220/33 kV Unit-8 S/s to 400/220 kV Pachora S/s [Length- 66.816 km] - Regd.		
S. No	**Reference No.**	**Dated**
(i)	RUMS: F/RUM/2022/REP/05-059/267	15.06.2023
(ii)	RUMS e-mail	25.09.2024
(iii)	BSNL: PTCC/WR/2023-24/MP-823	05.12.2023
(iv)	West Central Railway: WCR/N-HQ/120PTCC-COO-T-50-Pt-IIICase-399(Unit-8)	12.02.2024
(v)	Western Railway: SG.158/28/10/L-290	01.02.2024
(vi)	Defense: B/46937/Sigs7(b)/3441	25.04.2024

The PTCC proposal submitted vide reference (i) & (ii) has been examined. The LF induction on Block and Telecom circuits of West Central Railway & Western Railway with respect to details furnished vide above reference (iv) & (v) has been computed. The voltage likely to be induced on paralleling Block and Telecom circuits of West Central Railway & 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. DET-PTCC, BSNL WZ and DG Signals, MoD has issued No Objection Certificate (NOC) vide reference (iii) & (vi) respectively.

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 earth mat, R (Ohms)	d (mts) at 430 V	d (mts) at 650 V	d (mts) at 7 kV	d (mts) at 10 kV
220/33 kV Unit-8 S/s	117	28	0.489	5151	3351	160	62
400/220 kV Pachora S/s	73	44.1	0.22	3730	2409	67	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 Substations.

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.

Signed by Suman Kumar Maharana
Date: 28-09-2024 20:51:37

Chief Engineer

To,

1.	Divisional Engineer (PTCC), Western Zone	QA & Inspection circle, 1st floor, D- wing, BSNL Admin Bldg., Junu Tara Road, Santa Cruz (West), Mumbai-400054	
2.	GM (S&T) West Central Railway	O/o Gm (S&T), 1st Floor Annexure-II Building Jabalpur	
3.	GM (S&T) Western Railway	O/o CSTE, Station Building Churchgate, Mumbai	
4.	Executive Engineer RUMS Ltd.	Urja Bhjawan, Shivaji Nagar Bhopal	For Information

ANNEXURE-I

CEA Case No.: MP-513 **Name of the Power line**: 220 kV S/C Transmission Line from 220/33 kV Unit-8 S/s to 400/220 kV Pachora S/**s.**	**Map Scale : 1 cm= 500 m** **Length : 66.816 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.**
West Central Railway: WCR/N-HQ/120PTCC-COO-T-50-Pt- IIICase-399(Unit-8) Dated 12.02.2024					
Affected Blocks & Telecom Circuits Details					
1	Maksi R/s to Shajapur R/s	3.5	0.0076	20850	158
2	Shajapur R/s to Sarangpur R/s	-Out of Parallelism-			

ANNEXURE-II

CEA Case No.: MP-513 **Name of the Power line**: 220 kV S/C Transmission Line from 220/33 kV Unit-8 S/s to 400/220 kV Pachora S/**s.**	**Map Scale :** 1 cm= 500 m **Length** : 66.816 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: SG.158/28/10/L-290 Dated 01.02.2024					
Affected Blocks & Telecom Circuits Details					
1	Tarana R/s to Maksi R/s	-Out of Parallelism-			
2	Maksi R/s to Pir Umrod R/s	3.0	0.0063	22305	141
3	Pir Umrod R/s to Berchha R/s	-Out of Parallelism-			
4	Maksi R/s to Ranayala Jasnia R/s	-Out of Parallelism-			