



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. : MP-472		
Induced Voltage (IV) calculation in respect of PTCC proposal for 220 kV DCDS line from Ujjain (400 kV) S/s to proposed Nalkheda (220 kV S/s) (79.755 km) - regd.		
S. No	Reference No.	Dated
(i)	MPPTCL: 04-01/PTCC/2644/TR-I/11446	26.02.2020
(ii)	MPPTCL: 04-02/PTCC/1202/2083	14.09.2023
(iii)	BSNL: PTCC/WR/2021-22/MP-673	16.09.2021
(iv)	Western Railway: SG.158/28/10 (L-236) received via MPPTCL email dated 17.05.2023	21.06.2021
(v)	Defense: B/46937/Sigs 7(b)/2017	01.07.2020

The PTCC proposal submitted vide reference (i) has been examined. The LF induction on communication circuits of BSNL and Western Railway with respect to details furnished vide above reference (iii) & (iv) respectively have been computed. The voltages likely to be induced on paralleling communication cables of BSNL and Western Railway under Single Line to Ground fault conditions are enclosed at Annexure-I & II respectively. The screening factors as applicable have been considered. Vide reference (v) above, Defense have issued NOC (enclosed as Annexure-III).

EPR details for the proposed substations are given 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 Nalkheda S/s	130.86	24	0.20	1329.9	835.5	NIL	NIL

As per the details submitted by BSNL, no telecom exchanges are falling within the EPR zone of the proposed substation.

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

Encl.: As above

Director

I/31045/2023

To,

1.	Divisional Engineer (PTCC), Western Zone	QA & Inspection circle, 1 st floor, D- wing, BSNL Admin Bldg., Junu Tara Road, Santacruz (West), Mumbai-400054	
2.	GM (S&T)	Western Railway, O/o CSTE, S&T Dept., 5 th floor, Station Building, Churchgate, Mumbai - 400020	
3.	Chief Engineer (Plg. & Design)	MPPTCL, Block No. 3, Shakti Bhawan, Rampur, Jabalpur – 482008	Copy for information

I/31045/2023

ANNEXURE-I

CEA Case No.: MP-472 Name of the Power line: 220 kV DCDS line from Ujjain (400 kV) S/s to proposed Nalkheda (220 kV S/s)			Map Scale : 1 cm= 500 m Total Length : 79.755 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: PTCC/WR/2021-22/MP-673 Date: 16.09.2021					
1	Nalkheda Exchange				
A	Ex 3 - 1	IV less than 430 V			
B	Ex 3 - 2				
C	Ex 3 - 3				
D	Ex 3 - 4				
E	Ex 3 - 5				
F	Ex 3 - 6				
2	Kanad Exchange				
A	Ex 4 - 1	IV less than 430 V			
B	Ex 4 - 2				
C	Ex 4 - 3				
D	Ex 4 - 4				
E	Ex 4 - 5				

I/31045/2023

ANNEXURE-II

CEA Case No.: MP-472 Name of the Power line: 220 kV DCDS line from Ujjain (400 kV) S/s to proposed Nalkheda (220 kV S/s)			Map Scale : 1 cm= 500 m Total Length : 79.755 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-236) Date: 21.06.2021					
1	Ujjain 'C' Cabin - Pingleshwar	Out of parallelism			0
2	Pingleshwar - Tapur	0.5	0.0001	23148	2
3	Tapur – Tarana Road	0.2	0.00002	23798	1

I/31045/2023

Annexure-III

Tele : 23019746

MP-472

Directorate General of Signals
Signals 7
General Staff Branch
Integrated HQ of MoD, (Army)
DHQ PO, New Delhi – 110011

B/46937/Sigs 7(b)/2017/

07 Jul 2020

Chief Engineer (Procurement)
Madhya Pradesh Power Transmission Co. Ltd.
Block No. 3, Shakti Bhawan, Rampur,
Jabalpur (M.P.) 482008

**CONSTRUCTION OF 220KV DCDS LINE FROM UJJAIN (400KV S/S) TO PROPOSED
NALKHEDA (220KV S/S)-PTCC ROUTE APPROVAL**

1. Ref your letter No 04-01/PTCC/2644/TR-I/11446 dt 26 Feb 2020. (copy att).
2. No Objection Certificate (NOC) is accorded based on inputs provided vide Map sheet received under your letter mentioned above.
3. Documents alongwith map sheets (in original) are returned herewith for your further necessary action.

A. Rawat

Maj

GSO 1 (Comn)
for SO-in-CEnclosures : As aboveCopy to :-

✓ The Director (PTCC), CEA
Power Communication Development Division
NRPC Complex, 18-A Shaheed Jeet Singh Marg
Katwaria Sarai, New Delhi – 110016

for information

Divisional Engineer Telegraph (PTCC)
O/o GM (North); BSNL, QA & Inspection Circle,
CTS Compound, Africa Avenue Road,
Netaji Nagar, New Delhi-110023

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03/8/20

13/8/2020 Sh. Ramesh
RPS