



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-526		
Induced Voltage (IV) calculation for 220 kV S/C Nagda (MPPTCL) – Nagda Solar Transmission Line [Length- 3.62 km]– Regd.		
S. No	Reference No.	Dated
(i)	PESL: PESL/WRTS-II/TLC/UJN/NGD/80	17.09.2024
(ii)	PESL: e-Mail	25.03.2025
(iii)	BSNL: IC/MBI/PTCC/MP	10.01.2025
(iv)	Western Railway: SG.158/28/10/L-308	09.12.2024
(v)	Defense: B/46937/Sigs7(b)/4185	06.11.2024

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 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
220/33 kV Nagda Solar Power Plant S/s	62	27.2	0.7208	2765	1808	112	60

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 for issuance of PTCC route approval (RAC) shall be taken under intimation to this office in the stipulated period as specified in PTCC Manual and subsequent CLPTCC meetings.

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.	Project In charge PESL	85 MW Solar PV Power Plant Nagda, Dist.-Ujjain (M.P)	Copy for information.

ANNEXURE-I

CEA Case No.: MP-526			Map Scale : 1 cm= 500 m		
Name of the Power line: 220 kV S/C Nagda (MPPTCL) – Nagda Solar Transmission Line			Length : 3.62 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: IC/MBI/PTCC/MP Dated 10.01.2025

Affected Blocks & Telecom Circuits Details

1	Copper Cable from Palki to Dabri	IV Less than 430 V			
2	Cable from Nagda to Dabri				
3	OFC cable from Palki to Nagda	2.0	0.0015	16500	25
4	Chambal Marg Nagda to Birlagram	IV Less than 430 V			
5	Birlagram to Mehtawas Nagda				
6	Chambal Marg Nagda to RN Nagda				
7	RSU to hero showroom, Mahidpurd				
8	Hero Showroom to Govt. College Nagda				
9	Chambal Marg Nagda to Durgapur				
10	Gurjar Chauraha to Paliya Kalan				
11	Nagda RSU to LIC Nagda Toll				
12	LIC toll to LIC Nagda				
13	LIC to 400 kV Dabri				
14	400 kV to Nayara Petrol Pump	0.75	0.0138	20300	280
15	Nayara Petrol Pump to Hatai Palki	1.5	0.022	17500	385

ANNEXURE-II

CEA Case No.: MP-526			Map Scale : 1 cm= 500 m		
Name of the Power line: 220 kV S/C Nagda (MPPTCL) – Nagda Solar Transmission Line			Length : 3.62 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-308			Dated 09.12.2024		
<u>Affected Blocks & Telecom Circuits Details</u>					
1	Biploda Bagla R/s to Nagda R/s		-Out of Parallelism-		
2	Nagda R/s to Berwaniya R/s		-Out of Parallelism-		