



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. : RAJ-738		
Induced Voltage (IV) calculation for 400 kV D/C Sikar-II to Neemrana Transmission Line [Length- 133.509 km]– Regd.		
S. No	Reference No.	Dated
(i)	PGCIL: PG/NR-1/PSTL/TW-04/372	15.02.2024
(ii)	PGCIL: e-Mail	12.09.2024
(iii)	BSNL: DET/PTCC/ND/DV-10358/RAJ-1469/2024-2025/	20.05.2024
(iv)	North Western Railway: SG/158/NWR/PTCC/958	16.04.2024
(v)	Defense: B/46937/Sigs7(b)/3747	25.06.2024

The PTCC proposal submitted vide reference (i) and (ii) has been examined. The LF induction on Block and Telecom circuits of BSNL & North 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 & North 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 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
765/400 kV Sikar-II S/s	659	50	0.037	2176	1216	N.A	N.A

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), Northern Zone	BSNL, O/o GM (North), QA & Inspection Circle D-Tax Building, Eastern Court, Janpath New Delhi-110001	Annexure-I
2.	GM (S&T) NWR	North Western Railway, Headquarter Office, Room No. 136, First Floor, Near Jawahar Circle, Jaipur - 302017	Annexure-II
3.	POWERGRID	POWERGRID , Sikar Rajasthan	Copy for information.

ANNEXURE-I

CEA Case No.: RAJ-738			Map Scale : 1 cm= 500 m		
Name of the Power line: 400 kV D/C Sikar-II to Neemrana Transmission Line.			Total Length : 133.509 km		
			S.R. Value : 7500 Ohm-cm		
S.N o.	Telecom. Details	Length of Parallelism in Km.	Mutual Coupling in Ohms.	Effective Fault current in Amps.	I.V in Volts.

BSNL: DET/PTCC/ND/DV-10358/Raj-1469/2024-25 Dated 20.05.2024

Affected Blocks & Telecom Circuits Details

1.	Shrimadhapur to Jajod UG Armoured OFC	IV Less than 430 V			
2.	Palsana to Prithvipura UG Armoured OFC	IV Less than 430 V			
3.	Khandela to Doodhwalon ka Bas UG Armoured OFC	5.0	0.0157	21500	338
4.	Bhadwani to Jorawar Nagar UG Armoured OFC	IV Less than 430 V			
5.	Chala to Guhala UN Armoured OFC	IV Computation NOT required.			
6.	RICCO NMT to Sirohi GP UN Armoured OFC				
7.	Neem Ka Thana to Nayabal UN Armoured OFC				
8.	Neem Ka Thana to Mawanda UN Armoured OFC				
9.	Neem Ka Thana to Patan UN Armoured OFC				
10.	Nyorana to Nyorana GP UN Armoured OFC				
11.	Patan to Hasampur UN Armoured OFC				
12.	Bega Ki Nangal to Dalpatpura UN Armoured OFC				
13.	TJ Motahera to Gonera GP UN Armoured OFC				
14.	TJ Motahera to Pariyala/Malpura UN Armoured OFC				
15.	Nangal Chaudhary to Rai Malikpur UN Armoured OFC				
16.	Thanwas to Budhwal UG Armoured OFC	1.5	0.019	14250	270
17.	Alwar to Behror UN Armoured OFC	IV Computation NOT required.			
18.	Behror to Satomala UN Armoured OFC				
19.	Behror to Behror City UN Armoured OFC				
20.	Behror to Shahjanpur UN Armoured OFC				

ANNEXURE-II

CEA Case No.: RAJ-738			Map Scale : 1 cm= 500 m		
Name of the Power line: 400 kV D/C Sikar-II to Neemrana Transmission Line.			Total Length : 133.509 km		
			S.R. Value : 7500 Ohm-cm		
S.No.	Telecom. Details	Length of Parallelism in Km.	Mutual Coupling in Ohms.	Effective Fault current in Amps.	I.V in Volts.

North Western Railway: SG/158/NWR/PTCC/958

Dated 16.04.2024

Affected Blocks & Telecom Circuits Details

1.	Baori Thikaria to Palsana	Out of Parallelism			
2.	Palsana to Ranoli	Out of Parallelism			
3.	Ranoli to Goriyan	Out of Parallelism			
4.	Shri Madhopur to Kachera	Out of Parallelism			
5.	Kachera to Kanwat	Out of Parallelism			
6.	Kanwat to Bhagega	Out of Parallelism			
7.	Bhagega to Nim Ka Thane	10.0	0.0028	18300	51
8.	Nim, Ka Thane to Maonda	3.0	0.0023	17600	40
9.	Maonda to Jhilo	Out of Parallelism			
10.	Jhilo to Dabla	Out of Parallelism			
11.	Dabla to Nizampur	Out of Parallelism			