



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**

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<b>CEA Case No. : RAJ-836</b>		
<b>Induced Voltage (IV) Calculation for PTCC proposal of 33 kV D/C line on RSJ Pole from 400/33 kV substation at Badi Sid to 50 MW Solar plant (4 Nos. of solar block) in Badi Sid Village, Bap, Phalodi (Length: 17.5 kms)</b>		
<b>S. No</b>	<b>Reference No.</b>	<b>Dated</b>
(i)	AREH18L/50MW/PTCC/24-25/001	19.03.2025
(ii)	BSNL: DE/PTCC/NZ/BSNL-TD/DV-10559/RAJ-1605/2024-25	28.06.2025
(iii)	North Western Railway: SG/158/NWR/PTCC/1106	17.04.2025

The PTCC proposal submitted vide reference (i) has been examined. The LF induction on communication circuits of BSNL and North Western Railway with respect to details furnished vide above references (ii) and (iii) respectively has been computed. The voltage likely to be induced on paralleling communication cables of BSNL and North Western Railway under Single Line to Ground fault condition are enclosed at Annexure-I and Annexure-II respectively. The screening factors as applicable have been considered.

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 earthmat, R (Ohms)	d (mts) at 430 V	d (mts) at 650 V	d (mts) at 7 kV	d (mts) at 10 kV
33/0.8 kV 4 Nos. of solar block at Badi Sid, Bap	12.5	25	0.5	351	228	10	3

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

Taking the above into consideration, the values of Induced Voltages may be examined, and further information may be sent to the undersigned, as per the procedure specified in the PTCC Manual 2010.

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	
2.	GM (S&T), North Western Railway	Headquarter office, Room No. 136, First Floor, Near Jawahar Circle, Jaipur – 302017	
3.	M/s Adani Renewable Energy Holding Eighteen Limited	Adani Corporate House, Shantigram, Nr. Vaishno Devi Circle, S. G. Highway, Khodiyar, Ahmedabad – 382 421	Copy for information

**ANNEXURE-I**

<b>CEA Case No.: RAJ-836</b> <b>Name of the Power line:</b> 33 kV D/C line on RSJ Pole from 400/33 kV substation at Badi Sid to 50 MW Solar plant (4 Nos. of solar block) in Badi Sid Village, Bap, Phalodi			<b>Map Scale</b> : 1 cm= 500 m <b>Total Length</b> : 17.5 km <b>S.R. Value</b> : 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.
<b>BSNL: DE/PTCC/NZ/BSNL-TD/DV-10559/RAJ-1605/2024-25 Date: 28.05.2025</b>					
1	Kanshing Sid BTS	IV calculation is not required. Thus, BSNL letter is assumed as Deemed NOC			

**ANNEXURE-II**

<b>CEA Case No.: RAJ-836</b>			<b>Map Scale : 1 cm= 500 m</b>		
<b>Name of the Power line:</b> 33 kV D/C line on RSJ Pole from 400/33 kV substation at Badi Sid to 50 MW Solar plant (4 Nos. of solar block) in Badi Sid Village, Bap, Phalodi			<b>Total Length : 17.5 km</b>		
			<b>S.R. Value : 10000 Ohm-cm</b>		
<b>S.No.</b>	<b>Telecom. Details</b>	<b>Length of Parallelism in Km.</b>	<b>Mutual Coupling in Ohms.</b>	<b>Effective Fault current in Amps.</b>	<b>I.V in Volts.</b>
<b>North Western Railway: SG.158/28/12/14361 Date: 16.12.2024</b>					
1	Nokhra to Sird	Out of parallelism			
2	Sird to Bap	5.25	0.000638	25862	16.5