



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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CEA Case No. : RAJ-737		
Induced Voltage (IV) Calculation for PTCC proposal of 400 kV S/C line on D/C tower from 400/33 kV AREH4L S/s at Badi Sid to 765/400/220 kV Bhadla-2 S/s (Length: 11.038 km) - regd.		
S. No	Reference No.	Dated
(i)	AREH4L/Rajasthan/PTCC/2024/01	06.02.2024
(ii)	AREH4L E-mail:	25.07.2024
(iii)	AREH4L E-mail:	31.07.2024
(iv)	BSNL: DET/PTCC/ND/DV-10388/Raj-1489 /2024-25	25.07.2024
(v)	North Western Railway: SG/158/NWR/PTCC/954 (received vide AREH4L e-mail dated 25.07.2024)	21.03.2024
(vi)	Defense: B/46937/Sigs 7(b)/3720	01.05.2024

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

DET, PTCC (NZ), BSNL vide reference (iv) and DG Signals, MoD vide reference (vi) has given their NOC for charging the line.

EPR zone for the proposed substation 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 7 kV	d (mts) at 10 kV
400/33 kV AREH4L S/s at Badi Sid	151.1	32.319	0.4382	4825	3141	155	63

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

**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	
2.	GM (S&T), North Western Railway	Headquarter Office, Room No. 136, 1 <sup>st</sup> Floor, Near Jawahar Circle, Jaipur – 302 017	
3.	M/s Adani Renewable Energy Holding Four Limited	Adani Corporate House, Shantigram, Nr. Vaishnavi Devi Circle, SG Highway, Khodiyar, Ahmedabad – 382 421	For information

**ANNEXURE-I**

<b>CEA Case No.:</b> RAJ-737  <b>Name of the Power line:</b> 400 kV S/C line on D/C tower from 400/33 kV AREH4L S/s at Badi Sid to 765/400/220 kV Bhadla-2 S/s			<b>Map Scale</b> : 1 cm= 500 m  <b>Total Length</b> : 11.038 kms  <b>S.R. Value</b> : 2000 Ohm-cm		
<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>
North Western Railway: SG/158/NWR/PTCC/954 Dated: 21.03.2024					
1	Bap to Sird	6.5	0.02222	17821	395
2	Sird to Nokhra	0.7	0.0023	11740	27