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

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CEA Case No.: HRA-248		
Induced Voltage (IV) calculation for PTCC proposal of 400 kV D/C Babai (RRVPNL) to Bhiwani (PG) Transmission Line [Length- 110.964 km]- Regd.		
Reference:		
S. No.	**Reference No.**	**Dated**
(i)	NRSSXXXVI Transmission Limited Letter No: NRSS/2022-23/61	22.09.2022
(ii)	NRSSXXXVI Transmission Limited e-mail	11.07.2023
(iii)	CEA: CEA-PS-17-11(11)/57/2023-PCD Division I/29395/2023	02.08.2023
(iv)	NRSSXXXVI Transmission Limited Letter No: NRSS/2023-24/32	05.09.2023
(v)	BSNL: DET/PTCC/ND/DV-10204/Raj-1416/2023-2024	29.05.2023
(vi)	North Western Railway : SG/158/NWR/PTCC/895	14.10.2022
(vii)	Defense : B/46937/Sigs 7(b)/3044	08.12.2022

The PTCC proposal submitted vide reference (i) & (ii) has been examined. Induced Voltage calculation for subject cited Transmission Line was issued vide reference (iii). Later, vide reference (iv) NRSSXXXVI Transmission Limited has stated that earlier submitted Soil Resistivity values were measured by their site staff and subsequent to the IV computation they hired NABL accredited laboratory staff for measurement of soil resistivity. However, a significant deviation was observed in both the values and thereafter a joint visit to verify soil resistivity with representatives from CEA, BSNL, North Western Railway and NRSSXXXVI Transmission Limited was done and its report is enclosed at Annexure-III.

The LF induction on Block and Telecom circuits of BSNL and North Western Railway with respect to details furnished vide above reference (v) & (vi) respectively, has been computed. The voltage likely to be induced on paralleling Block and Telecom circuits of BSNL and 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 (vii).

Taking above into consideration, necessary action regarding issuance of PTCC approval for the subject cited transmission line might be taken under intimation to this office.

Encl.: As above**.**

Director

To,

1.	Divisional Engineer (PTCC), Northern Zone	BSNL O**/**o PGM **(**N**)**, 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.	General Manager Power Transmission	94, Pocket**-**4, Sector**-**11 Dwarka, New Delhi	Copy for information

ANNEXURE-I

CEA Case No.: HRA-248 **Name of the Power line**: 400 kV D/C Babai (RRVPNL) to Bhiwani (PG) Transmission Line.	**Map Scale : 1 cm= 500 m** **Total Length : 110.964 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: DET/PTCC/ND/DV-10204/Raj-1416/2023-2024 Date: 29.05.2023					
Affected Blocks & Telecom Circuits Details					
1	Bhiwani to Roopgarh Village	IV Less than 430 V			
2	Dalanwas to Madhogarh				
3	Dalanwas to Gadarwas				
4	Satnali to Nawan	4.6	0.04	23760	950
5	Mehar to Basai	IV Less than 430 V			
6	Mehar to Sihou	IV Less than 430 V			
7	Basai to Ilqakha	4.4	0.056	15800	885
8	Basai to Kisanpur	4.4	0.055	15780	868
9	Mehar to Goni	IV Less than 430 V			
10	Mehar to Rampur				
11	Rampur to Tyanda				
12	Rampur to Dadakin				
13	Rampur to Nagpura				
14	Pacheri to Buirr				
15	Pacheri to Pacheri Khurd				
16	Pacheri Kalan to Rasoolpur				
17	Rasoolpur to Dhana				
18	Buhana to Jhawha				
19	Buhana to Hasas				
20	Buhana to Buhana				
21	Buhana to Mainpuri				
22	Kuharawas to Jharrd				
23	Kuharawas to Kuharawas				

ANNEXURE-II

CEA Case No.: HRA-248 **Name of the Power line**: 400 kV D/C Babai (RRVPNL) to Bhiwani (PG) Transmission Line.	**Map Scale : 1 cm= 500 m** **Total Length : 110.964 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.
North Western Railway Letter No: SG/158/NWR/PTCC/895 Date: 14.10.2022					
Affected Blocks & Telecom Circuits Details					
1	Bawani Khera to Bhiwani bypass cabin	-Out of Parallelism-			
2	Bhiwani bypass cabin to Bhiwani Junction	-Out of Parallelism-			
3	Bhiwani Junction to Manheru	4.0	0.0006	26950	17
4	Manheru to Charkhi Dadri	-Out of Parallelism-			
5	Nim Ka Thana to Maonda	2.0	0.00015	27800	4
6	Maonda to Jhilo	4.0	0.0004	23390	9
7	Jhilo to Dabla	7.5	0.0014	22620	32
8	Dabla to Nizampur	9.5	0.0172	18033	310
9	Nizampur to Amarpur Jorasi	0.75	0.0002	15800	03
10	Amarpur Jorasi to Narnaul	-Out of Parallelism-			
11	Sohansara to Satnali	-Out of Parallelism-			
12	Satnali to Zerpur Pali	5.2	0.0003	19960	6
13	Zerpur Pali to Mahendragarh	-Out of Parallelism-			