



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



No. CEA/PCD/PTCC/MRA-1159/499-501

Date: 03.09.2020

Subject: Induced Voltage calculation in respect of PTCC proposal for 220 kV Wani – Pandharkawada DCDS line, length – 58 kms.

Ref: (i) MSETCL letter no. MSETCL/CO/PS/S-I/PTCC/B-568/04583 dated 20.06.2019
(ii) BSNL letter no. IC/MBI/PTCC/MRA-2432/04 dated 14.01.2020
(iii) Western Railway letter no. N.153/PTCC/220kV/MAH-735 dated 09.07.2019
(iv) Defense letter no. B/46937/Sigs 7(b)/1724 dated 25.08.2019

MSETCL submitted the subject proposal vide above cited reference (i). The low frequency induction on BSNL and Railway Telecommunication circuits as per details furnished vide above cited references (ii) and (iii) respectively has been examined. The Soil Resistivity value has been taken as 20,000 Ohms-cm, as per data submitted by the Power Authority. Voltages likely to be induced on paralleling BSNL Telecom Cables and Railway Telecommunication circuits under single line to ground fault condition are enclosed at Annex-I&II respectively. The screening factors as applicable have been considered. Defense has accorded NOC vide above Ref.(iv) for the above line (a copy enclosed at Annex-III).

Taking above into consideration, take necessary action regarding issue of PTCC route approval.

Enclosures.: As above.

Upendra Kumar
03.09.2020
(Upendra Kumar)
Chief Engineer

To,
Divisional Engineer (PTCC), Inspection Circle,
Bharat Sanchar Nigam Limited (BSNL),
3rd Floor, D-Wing, BSNL Admin Building
Juhu Tara Road, Santacruz (West), Mumbai-400054

MIC

Copy to:

1. GM(S&T), Central Railway, CSMT Mumbai, Headquarters Office, S&T Branch, 3rd Floor, Annex Bldg, Mumbai CST, Mumbai-400001 (with Annexure-II).
2. Chief Engineer(Project Schemes), MSETCL, Plot No. C-19, E-Block, Prakashganga, Bandra-Kurla Complex, Bandra (East), Mumbai – 400051.

CEA office case No. MRA-1159	Map scale - 1cm = 100m , 500 mchce.
DET(PTCC) office case No - MRA -	Route length- 58 km.
Railway office case no. 2432	Soil resistivity- 20,000 Ω -cm
Name of the power line	Proposed route map of ENY 220 KV line to Panthakowda Line.

Sr. No.	Name of the Telecom line / cable	Length of Parallelism in Kms.	Mutual Coupling in Ohms	Fault Current in Amps	Induced Voltage in Volts
1	(A) Wani Exchange				
2	1) Exch to Chikhalgaon - 100 p2 - 3 km		} < 430 V		
3	2) Exch to Railway Station - 100 p2 - 3.5 km				
4	3) Exch to Wani Market - 400 p2 - 2.5 km				
5	4) Exch to Water Supply - 200 p2 - 1.5 km				
6	5) Exch to Gavi Nagar - 200 p2 - 1.5 km				
7	6) Exch to Pargahi Nagar - 200 p2 - 1.5 km				
8					
9	(B) Bhalga Exchange				
10	1) Exch to WCL office - 100 p2 - 1 km		- OUT OF PARALLELISM		
11	2) Exch to WCL Colony - 100 p2 - 500 ft		} < 430 V		
12	3) Exch to Bhalga Gaon - 100 p2 - 1.5 km				
13					
14	(C) Mazegaon Exchange				
15	1) Exch to Panchayat Samiti - 100 p2 - 1 km		- OUT OF PARALLELISM		
16	2) Exch to Police Station - 100 p2 - 1 km		} < 430 V		
17	3) Exch to Court - 100 p2 - 1.5 km				
18	4) Exch to Tahsil - 100 p2 - 1.5 km				
19					
20					
21					

फराज़ / FARAZ
 उप निदेशक / Deputy Director
 केन्द्रीय विद्युत प्राधिकरण / C.E.A.
 विद्युत मंत्रालय / Min. of Power
 भारत सरकार / Govt. of India
 नई दिल्ली / New Delhi-66

CEA office case No. MRA-1159	Map scale - 1 cm = 500 meters
DET(PTCC) office case No - MRA -	Route length- 58 kms.
Railway office case no. 2432	Soil resistivity- 20,000 Ω -cm
Name of the power line	220KV Wani - Pandharkawda Line.

Sr. No.	Name of the Telecom line / cable	Length of Parallelism in Kms.	Mutual Coupling in Ohms	Fault Current in Amps	Induced Voltage in Volts
1	① Pandharkawda exchange	4 km from Sambardi			
2	② Umri, exchange	3.5 km from Sai Kheda.			
3	③ Kasanj exchange	5.5 km from Salhasa.			
4	(All the cable pairs are to be in				
5	peripheral circumference of 1 km only)				
6					
7	④ from ① to cotton mill	2 km (100 p)			OUT OF PARALLELISM
8	⑤ from ① to cotton factory	1.5 km (200 p)			} < 430 V
9	⑥ from ① to Pump House	2.0 km (100 p)			
10					
11	⑦ from ② to Sai Kheda	1.8 km (100 p)			< 430 V
12	⑧ from ② to Telang Takli	1.0 km (100 p)			OUT OF PARALLELISM
13	⑨ from ② to Kin Kheda	1.5 km (200 p)			< 430 V
14					
15	⑩ from ③ to Mangi fata	2.4 km (100 p)			} < 430 V
16	⑪ from ③ to cotton mill	1.3 km (100 p)			
17					
18					
19					
20					
21					

फराज़/FARAZ
 उप निदेशक/Deputy Director
 केन्द्रीय विद्युत प्राधिकरण/C.E.A.
 विद्युत मंत्रालय/Min. of Power
 भारत सरकार/Govt. of India
 नई दिल्ली/New Delhi-66

ANNEXURE - II

Case No.: MRA-1159 Name of the Power line: 220 kV Wani – Pandharkawada DCDC Line			Map Scale : 1cm=500mts Total Length : 58 km S.R. Value : 20,000 Ohms-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. N.153/PTCC/220kV/MAH-735 dated 09.07.2019					
Affected Blocks & Telcom Circuits Details					
1	Majri Khadan – Kayar	4.25	0.00164	9800	16.07
2	Wani – Rajur	6.25	0.00129	9000	11.62

FARAZ
फ़राज़ / FARAZ
उप निदेशक / Deputy Director
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नई दिल्ली / New Delhi-66

MRA - 1159

Tele : 23019746

Directorate General of Signals
 Signals 7
 General Staff Branch
 Integrated HQ of MoD (Army)
 DHQ PO, New Delhi - 110011

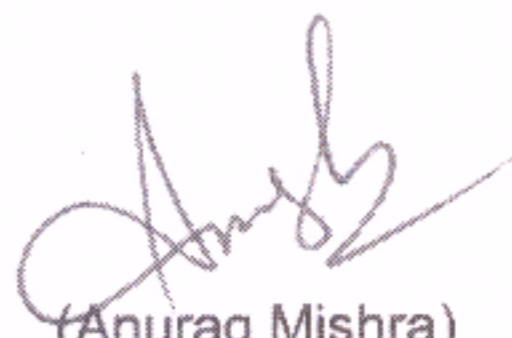
B/46937/Sigs 7(b)/1724/

26 Aug 2019

Office of the Chief Engineer,
 Projects Schemes Department
 Maharashtra State Electricity Transmission Co. Ltd
 "Prakashganga", Plot No C-19, 'E' Block,
 Bandra - Kurla Complex, Bandra (East),
 Mumbai-400051

PTCC PROPOSAL FOR 220KV WANI-PANDHARKAWADA (PROPOSED) DCDC LINE
LENGTH=58KMS

1. Ref your letter No MSETCL/CO/PS/S-I/PTCC/B-568/No 04583 dt 20 Jun 2019 (copy att).
2. No Objection Certificate (NOC) is accorded based on inputs provided vide Map sheets received under your letter mentioned above.
3. Documents alongwith map sheets (in original) are forwarded herewith for your further action.



(Anurag Mishra)
 Lt Col
 GSO 1 (Comn)
 for SO-in-C

Enclosures : As above

Copy to :-

The Director (PTCC), CEA
 Power Communication Development Division
 NRPC Complex, 18-A Shaheed Jeet Singh Marg
 Katwaria Sarai, New Delhi - 110016

Divisional Engineer Telegraph (PTCC)
 O/o GM (North); BSNL, QA & Inspection Circle,
 CTS Compound, Africa Avenue Road,
 Netaji Nagar, New Delhi-110023

for information

for info
 03/09
 UK
 03/09

