



भारत सरकार

Government of India

विद्युत मंत्रालय

Ministry of Power

केन्द्रीय विद्युत प्राधिकरण

Central Electricity Authority

पावर कम्युनिकेशन डवलपमेंट प्रभाग

Power Communication Development Division

No./CEA/PCD/PTCC/GUJ-728/62-64

Date : 17.01.2019

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

**Subject:** Induced Voltage Calculation in respect of PTCC proposal for 400 kV D/C Mundra – Bhuj Pooling Station Transmission Line

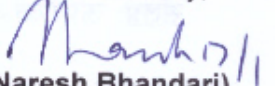
**Reference:** i) BSNL letter no. IC/MBI/PTCC/GUJ-2452 dated 23.10.2017  
ii) Western Railway letter no. SG.158/28/12(755) dated 12.09.2017  
iii) Defense letter no. B/46937/Sigs 7(b)/579 dated 04.07.2017

Sir,  
The instant PTCC proposal has been examined. The low frequency induction on telecom cables of BSNL and Block and Telecom circuits of Western Railway with respect to details furnished vide above references have been computed. The Average Soil Resistivity (SR) value has been taken as 10,000 Ohm-cm, as intimated by the Power authority (PGCIL). The voltages likely to be induced on paralleling telecom cables of BSNL and Block & Telecom circuits of Western Railway under Single Line to Ground fault condition are enclosed at Annex-I & II respectively. The screening factors, as applicable, have been considered. Vide ref. (iii) above, Defense Authority have issued No Objection Certificate (NOC) (enclosed as Annex – III).

Taking above into consideration, kindly take necessary action for PTCC route approval.

**Encl.:** As above

Yours faithfully,

  
(Naresh Bhandari)  
Chief Engineer


Copy to:

1. GM (S&T), Western Railway, Office of CSTE, S&T Dept., 5th Floor, Station Building, Churchgate, Mumbai-400020 (With annexure-II Only).
2. Chief Manager (Engg), PGCIL WRTS-II, Plot No. 54, Adjacent to Riya-Revati Resort, Opp. Ambe Vidhyalaya, Sama-Savli Road, Vadodara, Gujarat-390008

## ANNEXURE - I

Case No.: GUJ-728		मैप स्केल : 1 सेमी=500 मीटर			
Name of the Power line: 400 kV D/C Mundra – Bhuj Pooling Station Transmission Line		रूट की लम्बाई : 98.323 कि.मी			
		औसत एस.आर की मात्रा : 10,000 ओम_सेमी			
क्रम संख्या	टेलीकाम विवरण	समानांतरी य लम्बाई( कि.मी में)	म्युचुअल कप्लिंग (ओम में)	प्रभावी फाल्ट करंट ( एम्पियर में)	प्रेरण वोल्टेज ( वोल्ट में)

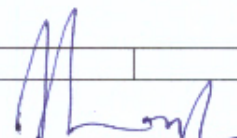
<b>BSNL DETAIL</b>					
Ref. No. IC/MBI/PTCC/GUJ-2452 Date : 23-10-2017					
<b>1</b>	<b>BHADIA NANA EXCHANGE</b>				
1A	Bhadia Nana Ex.-local-200*2P				
2A	Bhadia Nana Ex.-Bhadia mota-20*1P			IV LESS THAN 430 V	
3A	Bhadia Nana Ex.-Pagadi-50*1P				
<b>2</b>	<b>KANDAGARA EXCHANGE</b>				
1B	Kandagara Exch.-Local -200*1 P				
2B	Kandagara Exch.-Moti Khakhar-50*1 P			OUT OF PARALLELISM	
3B	Kandagara Exch.-GCPL-50*1 P				
4B	Kandagara Exch.-Local -100*1 P			IV LESS THAN 430 V	
<b>3</b>	<b>BIDADA EXCHANGE</b>				
1C	Bidada Exch.- Local- 200*2 P				
2C	Bidada Exch.- Nani khakhar- 100*2 P			IV LESS THAN 430 V	
3C	Bidada Exch.- Local- 800*2 P				
4C	Bidada Exch.- Local- 400*1 P				
5C	Bidada Exch.- Talwana- 50*1 P				
<b>4</b>	<b>KODAI EXCHANGE</b>				
1D	Kodai Exch.- Local-400*1 P				
2D	Kodai Exch.- Local-20*1 P			OUT OF PARALLELISM	
3D	Kodai Exch.- Local-100*1 P				
4D	Kodai Exch.- Mandvi Chowkdi-400*1 +100 P			IV LESS THAN 430 V	
<b>5</b>	<b>ASAMBIA MOTA EXCHANGE</b>				
1E	Asambia Mota Ex.-Local-20*1+ 50*1 P				
2E	Asambia Mota Ex.-Local- 50*3 P			IV LESS THAN 430 V	
3E	Asambia Mota EX.-Local- 50*3 P				
<b>6</b>	<b>SHARDI EXCHANGE</b>				
1 F	Shardi Ex.-local-100*1 P			OUTSIDE IV CALCULATION CONSIDERATION ZONE	
2 F	Shardi Ex.-local-50*1 P				
<b>7</b>	<b>MAMALMORA EXCHANGE</b>				
1G	Mamalmora Ex.-Ludva-100*2 P				
2G	Mamalmora Ex.-Jamthara-20+10 P			IV LESS THAN 430 V	
3G	Mamalmora Ex.- local-20*1 P				
4G	Mamalmora Ex.- local-50*1+ 20*1 P				
<b>8</b>	<b>VEKRA EXCHANGE</b>				
1H	Vekra Ex.-local-200*2P				
2H	Vekra Ex.-local-100*1P			IV LESS THAN 430 V	
3H	Vekra Ex.-local-100*1P				
4H	Vekra Ex.-local-100*1P				

  
 नरेश भंडारी/NARESH BHANDARI  
 मुख्य अभियन्ता/Chief Engineer  
 केन्द्रीय विद्युत प्राधिकरण/C.E.A.  
 विद्युत मंत्रालय/Ministry of Power  
 भारत सरकार/Govt. of India  
 नई दिल्ली/New Delhi 110001

## ANNEXURE - I

Case No.: GUJ-728		मैप स्केल : 1 सेमी=500 मीटर			
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		औसत एस.आर की मात्रा : 10,000 ओम_सेमी			
क्रम संख्या	टेलीकाम विवरण	समानांतरि य लम्बाई( कि.मी में)	म्युचुअल कप्लिंग (ओम में)	प्रभावी फाल्ट करंट ( एम्पियर में)	प्रेरण वोल्टेज ( वोल्ट में)

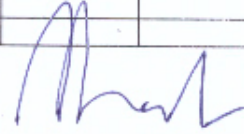
<b>9</b>	<b>GADHSISA EXCHANGE</b>				
11	Gadhsisa Ex.-Local- 400+100*1 P				IV LESS THAN 430 V
21	Gadhsisa Ex.-Local- 400*1 P				
31	Gadhsisa Ex.-Virani- 100*1+50 P				
41	Gadhsisa Ex.-Vmaun Nani- 200*1 P				
<b>10</b>	<b>SUKHPAR (R) EXCHANGE</b>				
1J	Sukhpar(R) Ex.-Local- 400*2 P				OUTSIDE IV CALCULATION CONSIDERATION ZONE
2J	Sukhpar(R) Ex.-Local- 20*2 P				
3J	Sukhpar(R) Ex.-Local-50*2 P				
4J	Sukhpar(R) Ex.-Local-100*1 P				
<b>11</b>	<b>MADHAPAR EXCHANGE</b>				
1K	Madhapar Ex.- Local-100*1 P				IV LESS THAN 430 V
2K	Madhapar Ex.-Kurboi-100*1 P	4.2	0.0964	9018	869
3K	Madhapar Ex.-Local-50*1 P				IV LESS THAN 430 V
<b>12</b>	<b>DESALPAR EXCHANGE</b>				
1L	Desalpar Ex.-Local-100 *1 P				OUT OF PARALLELISM
2L	Desalpar Ex.-Local-100 *2 P				
3L	Desalpar Ex.-NKTR Road-50 *1 P				
<b>13</b>	<b>ANANDSAR EXCHANGE</b>				
1M	Anandsar Ex.-Local-20*1 P				OUT OF PARALLELISM
2M	Anandsar Ex.-Local-100*1 P				
<b>14</b>	<b>KALYANPUR EXCHANGE</b>				
1N	Kalyanpur Ex.-Local-400*1 P				IV LESS THAN 430 V
2N	Kalyanpur Ex.-Local-10*3 P				
3N	Kalyanpur Ex.-Local-20*2 P				
4N	Kalyanpur Ex.-Local-50*2 P				
<b>15</b>	<b>VUTHON EXCHANGE</b>				
1O	Vithon Ex.-local-400*2 P				OUTSIDE IV CALCULATION CONSIDERATION ZONE
2O	Vithon Ex.-local-20*3 P				
3O	Vithon Ex.-local-10*3 P				
4O	Vithon Ex - local-200*2 P				
5O	Vithon Ex - local-50*2 P				
6O	Vithon Ex - local-100*2 P				
<b>16</b>	<b>NIRONA EXCHANGE</b>				
1P	NIRONA Ex - local-20*3 P				IV LESS THAN 430 V
2P	NIRONA Ex - local-50*1 P				
3P	NIRONA Ex - local-100*1 P				
4P	BIDODA Ex. - local-10*2 P				

  
 नरेश भंडारी/NARESH BHANDARI  
 मुख्य अभियन्ता/Chief Engineer  
 केन्द्रीय विद्युत प्राधिकरण/C.E.A.  
 विद्युत मंत्रालय/Ministry of Power  
 भारत सरकार/Govt. of India  
 नई दिल्ली/New Delhi-86

## ANNEXURE - II

Case No.: GUJ-728		मैप स्केल : 1 सेमी=500 मीटर			
Name of the Power line: 400 kV D/C Mundra - Bhuj Pooling Station Transmission Line		रूट की लम्बाई : 98.323 कि.मी			
		औसत एस.आर की मात्रा : 10,000 ओम_सेमी			
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<b>WESTERN RAILWAY</b>					
Ref. No. SG.158/28/12(755) Date : 12-09-17					
<b>AFFECTED BLOCK &amp; TELECOM CIRCUITS DETAIL</b>					
1	NEW BHUJ - NALIYA CANTT.	4.6	0.0032	9480	30
2	NALIYA CANTT. - NALIYA	OUT OF PARALLELISM			0



नरेश भंडारी / NARESH BHANDARI  
 मुख्य अभियन्ता / Chief Engineer  
 केन्द्रीय विद्युत प्राधिकरण / C.E.A.  
 विद्युत मंत्रालय / Ministry of Power  
 भारत सरकार / Govt. of India  
 नई दिल्ली / New Delhi-66

Tele : 23019746

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

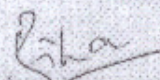
B/46937/Sigs 7(b)/579/

04 Jul 2017

Chief Manager (Engg)  
Power Grid, SRT-II  
Plot No 54, Adjacent to Riya-Ravati Resort  
Opp, AmbeVidyalaya, Sama-Savil Road  
Vadodara - 390008

PTCC CASE FOR 400 KV D/C MUNDRA-BHUJ POOLING SS (TRIPLE SNOWBIRD)  
TRANSMISSION LINE ASSOCIATED WITH TR. SYSTEM FOR SYSTEM  
STENGTHENING ASSOCIATED WITH MUNDRA UMPP PART-B

1. Ref your letter No WRTS-II/Engg/Vadodra/PTCC/2107/400KV DC/ Mundra-Bhuj/703/954 dt 23 May 2017.
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 returned herewith for your further necessary action.

  
(Bikram Kunwar)  
Lt Col  
GSO 1 (Comn)  
for SO-in-C

Encls : (As above)

Copy to :-

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

- for information.