



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-703/ 350-352

Date: 26.03.2019

DET (PTCC), Western Zone,
Bharat Sanchar Nigam Limited (BSNL),
O/o DET(PTCC), QA & Inspection Circle,
3rd Floor, D-Wing, BSNL Admin Bldg.,
Juhu Tara Road, Santacruz (West),
Mumbai – 400054.

Subject: Induced Voltage calculation in respect of PTCC proposal of 220 kV D/C Sankhari – Jangral line.

Ref: (i) BSNL letter no. IC/MBI/PTCC/GUJ-1852 dated 28.12.2018
(ii) Western Railway letter no. SG.158/28/12/69 dated 09.07.2014

Sir,

The low frequency induction on BSNL and Railway Telecommunication circuits as per details furnished vide above cited references (i) and (ii) respectively has been examined. The Average Soil Resistivity value has been taken as 5000 Ohms-cm, as per data submitted by 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.

As the PTCC proposal was registered before the decision of consideration of Defence, the requirement of Defence Telecom details may be waived off.

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

Encl.: As above

Yours faithfully,

(Naresh Bhandari) 26/3
Chief Engineer

Copy to:

- 1) Office of CSTE, Western Railway; S&T Dept. , 5th Floor, Station Building, Churchgate, Mumbai - 400020 (Annex – II only)
- 2) Chief Engineer(Projects), GETCO, Sardar Patel Vidyut Bhavan, Race Course, Vadodara – 390007.

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TELECOM DETAILS

GVT-703

1852

Case No: 280KV Sanichari -

Jangral line.

Map Scale: 1cm = 500mtrs.

Total Length: 31.588 KM

Average S.R. Value: 5.000 Ω -cm

Sl. No:	Telecom Details	Cable Pair	Length of Parallelism in KM	Mutual Coupling in Ohms.	Effective fault current in Amps	I.V. in Volts	Safe separation in yards
1	RANUJ TO sandes	200, 200, 50	←	← out side	IV less than 420V	IV Consideration Zone →	Zone →
2	RANUJ TO Hamidpur	20, 20	←	← out side	IV less than 420V	IV Consideration Zone →	Zone →
3	Balisana to Samoda	100	←	← out side	IV less than 420V	IV Consideration Zone →	Zone →
4	Balisana to Babasan	50	←	← out side	IV less than 420V	IV Consideration Zone →	Zone →
5	Balisana to Saewa	50, 20	←	← out side	IV less than 420V	IV Consideration Zone →	Zone →
6	Balisana to Kudel	100, 50	←	← out side	IV less than 420V	IV Consideration Zone →	Zone →
7	Kudel to Dighadi	20, 20	←	← out side	IV less than 420V	IV Consideration Zone →	Zone →
8	Kudel to Ranoda mota	50	←	← out side	IV less than 420V	IV Consideration Zone →	Zone →
9	Ranoda mota to Ranoda Nana	20	←	← out side	IV less than 420V	IV Consideration Zone →	Zone →
10	Balisana to Des	100, 50	←	← out side	IV less than 420V	IV Consideration Zone →	Zone →

RANUJ [X]

Balisana [X]

Dharpur [X]

11 Dharpur to Sathi - 50
 12 Dharpur to Ambliyasen - 20
 13 Dharpur to Mandutni - 200

DR. NARESH BHANDARI
 Chief Engineer
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 भारत सरकार/Govt. of India
 नई दिल्ली/New Delhi-66

TELECOM DETAILS

GVIJ-703

+ 852

Map Scale: 1 cm = 500 mtrs.

Total Length: 31.588 KM

Average S.R. Value: 5000 Ω-KM

Case No: _____ 220 KV. Samlchari

Name of the Power Line: _____

Jangra line

Sl. No:	Telecom Details	Cable Pair	Length of Parallelism in KM	Mutual Coupling in Ohms.	Effective fault current in Amps	I.V. in Volts	Safe separation in yards
14	Kamliwada to chhadasang	20	}	}	}	}	}
15	Kamliwada to Diyodra	100					
16	Kamliwada to Pratapnagar	10	}	}	}	}	}
17	Kamliwada to Hajipur	50, 20					
18	Kotawad to Wamaiya	50	}	}	}	}	}
19	Kotawad to Kantawada	50, 20					
20	Kantawada to Ajumana	20	}	}	}	}	}
21	Kotawad to Gulwasra	20					
22	Bilwan to Lakhand	20	}	}	}	}	}
23	Bilwan to Sihol	50					
24	Bilwan to Wadya	50, 20					

Kamliwada

Kotawad

Bilwan

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 प्रमुख अभियंता / Chief Engineer
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 विद्युत विभाग, राज्य सरकार, दिल्ली
 भारत सरकार / Govt. of India
 नया दिल्ली / New Delhi-66

GUJ-703

Annex-I

TELECOM DETAILS

Case No: 1852
 Name of the Power Line: 220KV Sanjchari to Jangral line
 Map Scale: 1cm = 500mts
 Total Length: 31.588 KM
 Average S.R. Value: 5000 ~ 6000

Sl. No:	Telecom Details	Cable Pair	Length of Parallelism in KM	Mutual Coupling in Ohms.	Effective fault current in Amps	I.V. in Volts	Safe separation in yards
25	Wagdad to Washu	10, 10	} ← - 1V	less than	430V	→	
26	Wagdad to Morpa	20, 10					
27	Jangral to Salcha	50	} ← - 1V less than 430V				
28	Jangral to Washi	50					
29	Jangral to Himantipara	50, 20					
30	Himantipara to Hyderabad	10	} ← - 1V less than 430V		than 430V	→	
31	Himantipara to Koitar & Raviayang	20					
32	Jangral to maisalc pura	50, 20					
32A	maisalc pura to Ablang	50					
33	maisalc pura to exaneshpura	20	} ← out side 1V Consideration Zone				
34	Katra to Mesar	50					

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 नई दिल्ली/New Delhi-66

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Wagdad [x]

Jangral [x]

Katra [x]

VIUJ-405

Annex-I

TELECOM DETAILS

Case No: 1852

Map Scale: 1 cm = 500 m

Name of the Power Line: 220 kV Samlchari to
Shangral line

Total Length: 31.588 KM

Average S.R. Value: 5000 Ω-cm

Sl. No:	Telecom Details	Cable Pair	Length of Parallelism in KM	Mutual Coupling in Ohms.	Effective fault current in Amps	I.V. in Volts	Safe separation in yards
35	Wayad to chacheli	50	}				
36	Wayad to Dharusang	20					
37	Wayad to Dhansang	50		out side IV Consideration Zone →			
38	Wayad to malusan	20					
39	Wayad to kcalodi	50					
40	Kasa to Nayta mota	50	}				
41	Nayta mota to Nayta mang	20					
42	Kasa to Baluva	20					
43	Baluva to wadhi	10		← out side IV Consideration Zone →			
44	Kasa to Bhutiya washa	20					
45	Kasa to sherpura	20					
46	Kasa to shamtha	20					

ayad [X]

safe [X]

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भारत सरकार/Govt. of India
नई दिल्ली/New Delhi-60

TELECOM DETAILS

Map Scale: 1 cm = 500 mtrs.

Total Length: 31.588 KM

Average S.R. Value: 5000 m-cm

Case No: 1852
 Name of the Power Line: 220kV Sanichari to
 Jangral line

Sl. No:	Telecom Details	Cable Pair	Length of Parallelism in KM	Mutual Coupling in Ohms.	Effective fault current in Amps	I.V. in Volts	Safe separation in yards
47	Aghar to kembuwg	100	} ← 1V less than 430V →				
48	Aghar to charup	50					
49	Aghar to Tanic washg	50,20					
50	Tanic washg to Sujnipur	50	} ← outside 1V consideration zone →				
51	Aghar to Paldi	50					
52	Paddi to Sagadiya	20 20	} ← 1V less than 430V →				
53	Ichimiana to Sanichar	100					
54	Ichimiana to Mehamedpur	50,20	} ← 1V less than 430V →				
55	Mehmadpur to ceafg	20					
56	Mehamedpur to exadusar	20					
57	Ichimiana to Mithiyi wothi	100	} ← outside 1V consideration zone →				
58	Ichungher to katpur	20,10					
59	Ichungher to Sabasam	20,20					

Aghar [X]

ichimiana [X]

Ichungher [X]

श्री श्री श्री NARESH SHANDARI
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 नई दिल्ली/NEW DELHI-66

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TELECOM DETAILS

Case No: 1852

Map Scale: 1 cm = 500mtr

Name of the Power Line: 220KV line

Total Length: 31.588 KM

Sanichehi - Sangrad line

Average S.R. Value: 5000-6000 cm

Sl. No:	Telecom Details	Cable Pair	Length of Parallelism in KM	Mutual Coupling in Ohms.	Effective fault current in Amps	I.V. in Volts	Safe separation in yards
1A	Patan to Matuwadi	20	} ← IV less than 430V →				
2A	Patan to Runi	05					
3A	Patan to Hansapur	10 10				430V →	
4A	Patan to Borsan	20, 20					
5A	Patan to Galapur	20					
6A	Patan to Rajpur	50	} ← IV less than 430V →				
7A	Patan to Anawadi	50	} 4 outside IV consideration zone →				
					<p style="text-align: center;"> <small> श्री श्री श्री वायसि (एन.डी.डी.) मुख्य अभियंता / Chief Engineer कक्षा-3, प्रगत विद्युत विभाग / C.E.A. भारत सरकार / Ministry of Power नई दिल्ली / New Delhi-66 </small> </p>		

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GUV-703

Annex-I

TELECOM DETAILS

Case No: 1852
 Name of the Power Line: 220KV Samichari
- Sangra 220KV line
 Map Scale: 1cm = 500m
 Total Length: 31.58 KM
 Average S.R. Value: 500-2-500 cm

Sl. No:	Telecom Details	Cable Pair	Length of Parallelism in KM	Mutual Coupling in Ohms.	Effective fault current in Amps	I.V. in Volts	Safe separation in yards
1B	Waghrol to Mudwada	50, 50	}				
2B	Waghrol to Pachalewada	50, 20					
3B	Dashawada to Kalodga	50	}				
4B	Dashawada to Dhanwada	20					
5B	Dashawada to Nidrodga	50	}	less than 430V			
6B	Kunwara to Lawara	50, 20					
7B	Kunwara to metran.	200	}				
8B	Varsiga to Kalanga	100, 100, 50					
9B	Varsiga to Nandotn	100	}	← out side 1V			
10B	Nandotri to Thalcarasan	100					
11B	Pungasan to Wangsan	100					
12B	Pundasan to Chandesar	50, 50					
13B	Chandesar to Hissar	20					

Waghrol
 Pachalewada
 Kalodga
 Dhanwada
 Nidrodga
 Lawara
 metran.
 Kalanga
 Thalcarasan
 Wangsan
 Chandesar
 Hissar

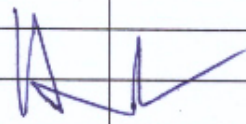
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 नई दिल्ली/New Delhi-66

ANNEXURE - II

Case No.: GUJ-703 Name of the Power line: 220 KV D/C Sankhari - Jangral Line			Map Scale : 1cm=500mts Total Length : 31.588 Km. S.R. Value : 5,000 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					
Ref. No: SG. 158 /28/12/69 DATED: 09-07-2014					
<u>Affected Blocks & Telcom Circuits Details</u>					
1	Pathan - Ranuj	4	0.0009	9500	9
2	Ranuj - Chanasma	---outside IV consideration zone---			0


 नरेश भंडारी/NARESH BHANDARI
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 नई दिल्ली/New Delhi 66