



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/AND-685 /280-282

Date: 08.03.2019

The Divisional Engineer Telecom,  
PTCC, T&D circle, BSNL,  
No.26, 1<sup>st</sup> floor, Raj Bhavan Exchange,  
Sardar Patel Road,  
Guindy, Chennai-600032

**Subject:** Induced Voltage calculation in respect of PTCC proposal for 220 kV DC line from 400/220 kV SS Sattenapalli to 220/132 kV SS Guntur (Prathipadu)

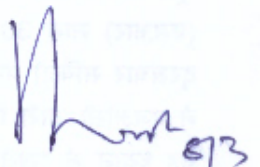
**Reference:** i) BSNL letter no. SR-PTCC/SAP-2142/03 dated 14.09.2018  
ii) South Central Railway letter no. SG.85/4/3/PTCC/SCRAP201831 RTD dated 28.08.2018  
iii) Defense letter no. B/46937/Sigs 7(b)/1189 dated 30.08.2018

Sir,  
The instant PTCC proposal has been examined. The low frequency induction on telecom cables of BSNL and Block & Telecom Circuits of South Central Railway; with respect to details furnished vide above references has been computed. The Soil Resistivity (SR) value has been taken as 30,000 Ohm-cm. The voltages likely to be induced on paralleling telecom cables of BSNL and Block & Telecom circuits of South Central Railway circuits under Single Line to Ground (SLG) fault condition have been computed and are enclosed at Annex-I & II respectively. The screening factors, as applicable, have been considered. Vide Ref. (iii) above, the Defense authority have issued No Objection Certificate (NOC) (a copy is enclosed at Annex-III).

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

**Encl.:** As above

m/c

  
(Naresh Bhandari)  
Chief Engineer

**Copy to:**

- (i) GM (S&T), South Central Railway, Head Quarters Office, Signal & Telecom Branch, Rail Nilayam, Secunderabad - 500025 (Annexure II only).  
(ii) Chief Engineer, Construction, APTRANSCO, Vidyut Soudha, Vijayawada -520004

## ANNEXURE - I

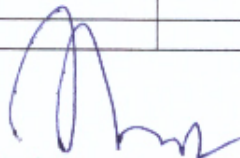
<b>Case No.:</b> AND-685 <b>Name of the Power line:</b> <b>220 kV DC line from 400/220 kV SS Sattenapalli to 220/132 kV SS Guntur (Prathipadu)</b>			<b>Map Scale</b> : 1cm=500mts <b>Total Length</b> : 47.793 Km. <b>S.R. Value</b> : 10,000-30,000 Ohms-cm		
S.No.	Telecom. Details	Length of Parallelism in Km.	Mutual Coupling in Ohms.	Effective Fault current in Amps.	I.V in Volts.

<b>BSNL</b>					
Ref. No. SR-PTCC/SAP-2142/03 dated 14.09.2018					
(1)	<b>Sattanpalli Exchange</b>				
1	Exchange to P 26	IV LESS THAN 430 V			
2	Exchange to P26 - Lrukupalem				
3	Exchange to P 27- Vadavalli				
4	Exchange to P 27- DP2713				
5	Exchange to P 27- DP 2714				
(2)	<b>Madala Exchange</b>				
1	Exchange to P 21 - Rudravaram	IV LESS THAN 430 V			
2	Exchange to P 21 - DP 2104				
3	Exchange to P 21 - DP 2105				
(3)	<b>Muppalla Exchange</b>				
1	Exchange to P21 - Chagantivaripalem	OUT OF PARALLELISM			
2	Exchange to P 21 - Lankela Kurapadu	IV LESS THAN 430 V			
3	Exchange to P 21 - Narnepadu				
4	Exchange to P 21 - Paludevarlapadu				
(4)	<b>Phirangipuram Exchange</b>				
1	Exchange to P 26 - Nudurupadu	IV LESS THAN 430 V			
2	Exchange to P 26 - DP 2602				
3	Exchange to P 26 - DP 2605				
4	Exchange to P 26 - DP 2608				
(5)	<b>Prathipadu Exchange</b>				
1	Exchange to Gottipadu	3.4	0.0657	9000	591
2	Exchange to Pillar 22	IV LESS THAN 430 V			
3	Exchange to Pillar 23				
4	Exchange to Pillar 21 - Thikkireddypalem				
5	Exchange to P 21- Nimmagaddavaripalem				
(6)	<b>Kondrupadu Exchange</b>				
1	Exchange to Yanamadala 22 Pillar	IV LESS THAN 430 V			
2	Exchange to Katuru Medical College				
3	Exchange to Viswamji Ashramam				
4	Exchange to P23 - Chinakondrupadu				
(7)	<b>Nadendla Exchange</b>				
1	Exchange to Tubadu	IV LESS THAN 430 V			
2	Exchange to Tubadu				

## ANNEXURE - I

<b>Case No.:</b> AND-685 <b>Name of the Power line:</b> 220 kV DC line from 400/220 kV SS Sattenapalli to 220/132 kV SS Guntur (Prathipadu)			<b>Map Scale</b> : 1cm=500mts <b>Total Length</b> : 47.793 Km. <b>S.R. Value</b> : 10,000-30,000 Ohms-cm		
S.No.	Telecom. Details	Length of Parallelism in Km.	Mutual Coupling in Ohms.	Effective Fault current in Amps.	I.V in Volts.

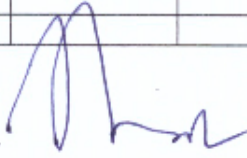
<b>(8)</b>	<b>Solasa Exchange</b>				
	Exchange to P21	IV LESS THAN 430 V			
	Exchange to Chirumamilla				
	Exchange to P21 — Sankrantipadu				
	Exchange to P 21 — Sankrantipadu				
	Exchange to Kotha Solasa				
	Exchange to Singiskhanpet				
<b>(9)</b>	<b>Edlapadu Exchange</b>				
1	Exchange to Lingaraopalem	4.3	0.1021	6000	613
2	Exchange to P20	IV LESS THAN 430 V			
3	Exchange to P20 - Karuchola	3.0	0.1052	6000	631
4	Exchange to P20 - Jaggapuram	IV LESS THAN 430 V			
5	Exchange to P24				

  
 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

**ANNEXURE – II**

<b>Case No.:</b> AND-685 <b>Name of the Power line:</b> 220 kV DC line from 400/220 kV SS Sattenapalli to 220/132 kV SS Guntur (Prathipadu)			<b>Map Scale</b> : 1cm=500mts <b>Total Length</b> : 47.793 Km. <b>S.R. Value</b> : 10,000-30,000 Ohms-cm		
S.No.	Telecom. Details	Length of Parallelism in Km.	Mutual Coupling in Ohms.	Effective Fault current in Amps.	I.V in Volts.

<b>South Central Railway</b>					
Ref. No. SG.85/4/3/PTCC/SCRAP201831 RTD dated 28.08.2018					
1	Nallapadu Jn(NLPD)-Perecherla	OUT OF IV CALCULATION CONSIDERATION ZONE			0
2	Perecherla(PRCA)-Phirangipuram	CONSIDERATION ZONE			0
3	Phirangipuram(PPM)-Nudurupadu	0.6	0.0006	6000	4
4	Nudurupadu(NDPU)-Satuluru	1.5	0.0041	6000	25
5	Satuluru(STUR)-Narasaraopet(NRT)	OUT OF PARALLELISM			0
6	Nallapadu Jn (NLPD)-Bandarupalli	OUT OF IV CALCULATION CONSIDERATION ZONE			0
7	Bandarupalli(BDPL)-Siripuram	CONSIDERATION ZONE			0
8	Siripuram(SRPM)-Pedakurapadu				0
9	Pedakurapadu(PKPU)-Sattenapalli	1.1	0.0002	9000	2
10	Sattenapalli(SAP)-Reddigudem(REM)	2.5	0.0027	10000	27
11	Reddigudem-Bellamkonda(BMKD)	OUT OF PARALLELISM			0

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

Tele : 23019746  
AND-685

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


B/46937/Sigs 7(b)/1189/

30 Aug 2018

Chief Engineer, Construction  
Transmission Corporation of Andhra Pradesh Ltd  
Vidyut Soudha.  
Vijayawada-5200 04

**ERECTION OF 220 KV DC LINE FROM 400/220 KV SATTENAPALLI SS TO THE  
PROPOSED 220/132 KV GUNTUR SS (47.793 KM)- PTCC PROPOSALS-  
FORWARDED-REGARDING**

1. Ref your letter No Lr. No. APTRANSCO/CE/Const/CPT320/Guntur/D.No. 269/18 dt 23 May 2018 (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 returned herewith for your further necessary action.

  
(A Rawat)  
Maj  
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

for information.