

सत्यमेव जयते

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/KNK-901/126-128

Date: 17.02.2020

The Divisional Engineer (PTCC), Southern Zone,  
Bharat Sanchar Nigam Limited (BSNL),  
O/o DET (PTCC), Inspection Circle,  
1<sup>st</sup> Floor, Raj Bavan Exchange No. 26,  
Sardar Patel Road, Guindy, Chennai-600032

**Subject:** Induced voltage calculation in respect of 400 kV DC (Quad) Tumkur pool Pavagada-Devanahalli transmission line.

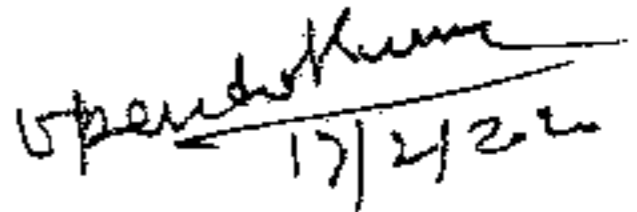
**Ref. :**

(i) PGCIL Ref. No. SR-II/PVGD-DVHL/400/Q/PTCC/2018	Dated: 23.04.2018
(ii) BSNL Ref. No. SR-PTCC/SKT-2114/07	Dated: 03.12.2018
(iii) South Western Railway Ref. No. SG/SWR/PVGD-DVHL/1766	Dated: 26.07.2018
(iv) Defense Ref. No. B/46937/Sigs 7(b)/1142	Dated: 19.07.2018

The PTCC proposal submitted vide ref. (i) has been examined. The low frequency induction on BSNL cables and block circuits of South Western Railways as per details furnished vide ref. (ii) and ref. (iii) respectively has been examined. The Soil Resistivity value has been taken as 30,000 Ohms-cm, as per data submitted by Power Authority. Voltages likely to be induced on paralleling BSNL cables and Railway block circuits under single line to ground fault condition are enclosed at Annex-I and Annex- II respectively. The screening factors as applicable have been considered. Defense has accorded NOC vide above ref. (iv) for this line (a copy enclosed at Annex-III).

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

**Encl.:** As above.

  
17/2/2020  
(Upendra Kumar)  
Chief Engineer, PCD

m/c

**Copy to:**

- ASTE/TELE/HQ, O/o Principal Chief Signal & Telecommunication Engineer, South Western Railway, Rail Soudha, Gadag Road, Hubballi-580020. (Annex-II only)
- Manager, PGCIL, Pavagada TLC, Tumkur District, Karnataka-561202.

## ANNEXURE - I

<b>Case No.:</b> KNK-901 <b>Name of the Power line:</b> 400 KV DC Pavagada(Tumkur Pool) - Devanahalli		<b>Map Scale</b> : 1cm=500mts <b>Total Length</b> : 142.152Km. <b>S.R. Value</b> : 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.

BSNL DETAIL					
Ref. No: SG. SR-PTCC/SKT-2114/07 DATED: 03-12-2018					
Affected Blocks & Telcom Circuits Details					
<b>I</b>	<b>(B) DODDABALLAPUR INDL AREA</b>				
1	Exge to Kasavinahalli(B-B1)	}			IV less than 430V
2	Exge to Virapura Village(B-B2)				
3	Exge to Spinning mill(B-B3)				
4	Exge to Bachkahalli(B-B4)				
5	Exge to Varadanahalli(B-B5)				
<b>II</b>	<b>(D) DODDABALLAPUR Exge UG cables</b>				
1	Exge to Car street(D-D1)	}			IV less than 430V
2	Exge to Toll (D-D2)				
3	Exge to G.B.Road(D-D3)				
4	Exge to Siddanayakanahalli(D-D4)				
5	Exge to Hospital(D-D5)				
<b>III</b>	<b>(RJN) RAJANUKUNTE Exge UG cables</b>				
1	Exge to Marasandra(RJN-RJN1)				IV less than 430V
<b>IV</b>	<b>(DV) DEVANAHALLI Exge UG cables</b>				
1	Exge to Mallanahalli(DV-DV1)	}			Out of parallelism
2	Exge to Kempalingahalli(DV-DV2)				
3	Exge to Bornmavara;DV-DV3)				
4	Exge to Anneswar(DV-DV4)				
5	Exge to Channahalli(DV-DV5)				
<b>V</b>	<b>(SG)SUBRAHMANYA GHATTI(SG) Exge UG cables</b>				
1	Exge to Police outpost(SG-SG1)	}			IV less than 430V
2	Exge to Towards DBP(SG-SG2)				
<b>VI</b>	<b>(TG) TUBAGERE Exge UG cables</b>				
1	Exge to Nagenahalli(TG-TG1)	}			IV less than 430V
2	Exge to Naraganahalli(TG-TG2)				

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S.No.	Telecom. Details	Length of Parallelism in Km.	Mutual Coupling in Ohms.	Effective Fault current in Amps.	I.V in Volts.

3	Exge to Kachahalli(TG-TG3)				IV less than 430V
<b>VII</b>	<b>(RG) RAJAGHATTA Exge UG cables</b>				
1	Exge to Towards BG(RG-RG1)	}			IV less than 430V
2	Exge to Dasagondenahalli(RG-RG2)				
3	Exge to Hancharahalli(RG-RG3)				
<b>VIII</b>	<b>(CKJ) CHIKKAJALA Exge UG cables</b>				
1	Exge to V.N.Cross to Bikamaranahalli(CKJ-CK'-CK1)	}			Out of Parallelism
2	Exge to V.N.Cross to Bettahalasuru(CKJ-CKLCK2)				
3	Exge to V.N.Cross to Hunasmaranahalli(CKJ-CK'-CK3)				
4	Exge to Bainahally(CKJ-CK4)				
5	Exge to Sadahalli to Nagamangala(CKJ-CK5)				
6	Exge to Tarabanahalli(CKJ-CK6)				
7	Exge to Misiganahalli(CKJ-CK7)				
8	Exge to Doddajala(CKJ-CK8)				
<b>(G)</b>	<b>GOWRIBIDANUR Exge UG cables</b>				
1	Exge to K K Halli(G-G1)	}			IV less than 430V
2	Exge to Kalludi(G-G2)				
3	Exge to Madanhalli(G-G3)				
4	Exge to Hirebidanur(G-G4)				
5	Exge to Kuruburahalli(G-G5)				
6	Exge to APMC yard(G-G6)				
7	Exge to towards Gundabura (G - G7)				
<b>(M)</b>	<b>MELYA Exge UG cables</b>				
1	Exge to Chittavala Halli(M-M1)	}			IV less than 430V
2	Exge to Jagireddihalli(M-M2)				
3	Exge to Vuchchedanahalli(M-M3)				
4	Exge to Hunjenahalli(M-M4)				
<b>(K)</b>	<b>VIDURASHWATTA(KADIRENAHALLI) Exge UG cables</b>				IV less than 430V

**ANNEXURE -I**

<b>Case No.:</b> KNK-901 <b>Name of the Power line:</b> 400 KV DC Pavagada(Tumkur Pool) - Devanahalli		<b>Map Scale</b> : 1cm=500mts <b>Total Length</b> : 142.152Km. <b>S.R. Value</b> : 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.

1	Exge to Halaganahalli(K-K1)	}			
2	Exge to Railway station(K-K2)				
3	Exge to Hindupur Route(Check post)(K-K3)				
4	Exge to Gauribidanur Route(K-K4)				
(T)	<b>TONDEBHAVI Exge UG cables</b>				
1	Exge to Gauribidanur Route(T-T1)	}			
2	Exge to Bangalore Route(T-T2)				
3	Exge to Manchenahalli route(T-T3)				
(MH)	<b>MANCHENAHALLI Exge UG cables</b>				
1	Exge to Tondebhavi Road(MH-MH1)	}			
2	Exge to Towards Chickballapur(MH-MH2)				
3	Exge to towards Minakunagurki(MH-MH3)				
4	Exge to towards Bandiramanahalli(MH-MH4)				
5	Exge to Towards Gaudagere(MH-MH5)				
(D)	<b>D.N.PALYA Exge UG Cables</b>				
1	Exge to Townlimit(D-D1)	}			
2	Exge to B.Bommasandra route(D-D2)				
3	Exge to Gauribidanur(D-D3)				
4	Exge to Huduguru Route(D-D4)				
(V)	<b>V.HOSAHALLI Exge UG cables</b>				
1	Exge to Towards Gudebande Route(V-V1)		Out of Parallelism		
(N)	<b>NAGARGERE Exge UG cables</b>				
1	Exge to Gauribidanur Route(N-N1)		Out of Parallelism		
(N)	<b>NMDK Exge UG cables</b>				
1	Exge to Towards KPTCI and BESCOM office(N-N1)	}			
2	Exge to Towards Thirumani(N-N2)				
3	Exge to Towards Kyataganakere (N-N3)				
(T)	<b>THIRUMANI EXGE UG cables</b>				
1	Exge to towards Pavagada(T-T1)				

Chief Engineer  
 केन्द्रीय विद्युत प्राधिकरण/C.E.A.  
 विद्युत मंत्रालय/Ministry of Power  
 भारत सरकार/Govt. of India  
 नई दिल्ली/New Delhi

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S.No.	Telecom. Details	Length of Parallelism in Km.	Mutual Coupling in Ohms.	Effective Fault current in Amps.	I.V in Volts.

2	Exge to Towards Vallur(T-T2)	}	IV less than 430V		
3	Exge to Towards Bus stand(T-T3)				
(V)	<b>Venkatapura Exge UG cables</b>				
1	Exge to Towards Bus stand(V-V1)	}	Out of Parallelism		
2	Exge to Towards Dommathamari(V-V2)				
(R)	<b>RODDAM Exge UG cables</b>				
1	Exge to Pillar 21 to PKD Road DP0001(R-R1)	}	IV less than 430V		
2	Exge to Pillar 22 to DP0002 (R-R2)				
3	Exge to Pillar 22 to DP0003 (R-R3)				
4	Exge to Pillar 23(MR0) to MRO DP0004(R-R4)				
(KGR)	<b>KOGRIA Exge UG cables</b>				
1	Exge to Peddakodipalli DP0001(KGR-KGR1)		IV less than 430V		
(CLK)	<b>CHALAKURU Exge UG cables</b>				
1	Exge to DP 0001(CLK-CLK1)	}	IV less than 430V		
2	Exge to DP 0002(CLK-CLK2)				
(M)	<b>MALUGURU (MLG) Exge UG cables</b>				
1	Exge to BITS cedege DP0001(M-M1))	}	IV less than 430V		
2	Exge to Nandamuri nagar DP0002(M-M2)				
3	Exge to HDP Road DP0003(M-M3)				
4	Exge to Manesamudram DP0004(M-M4)				

17/4/2020  
 मुख्य अधिकारी/Chief Engineer  
 केन्द्रीय विद्युत प्राधिकरण/C.E.A.  
 विद्युत मंत्रालय/Ministry of Power  
 भारत सरकार/Govt. of India  
 नई दिल्ली/New Delhi

## ANNEXURE - II

<b>Case No.: KNK-901</b> <b>Name of the Power line: 400 KV DC Pavagada(Tumkur Pool) - Devanahalli</b>			<b>Map Scale : 1cm=500mts</b> <b>Total Length : 142.152Km.</b> <b>S.R. Value : 30,000 Ohms-cm</b>		
S.No.	Telecom. Details	Length of Parallelism in Km.	Mutual Coupling in Ohms.	Effective Fault current in Amps.	I.V in Volts.

**RAILWAY DETAIL**

Ref. No: SG. / SWR / PTCC / PVGD - DVHL /1766 DATED: 26-07-2018

**Affected Blocks & RAILWAY Circuits Details**

1	YNK- RNN	Out of parallelism			0
2	RNN - DBU	8.6	0.0081	14683	119
3	DBU - ORH	7.1	0.0031	13464	42
4	ORH - MKL	5.1	0.0020	12471	26
5	MKL - TDV	10	0.0024	11200	27
6	TDV - SMWA	6.4	0.0039	10800	42
7	SMWA- GBD	6	0.0014	10421	14
8	GBD -VWA	5.9	0.0011	10213	11
9	VWA -DPE	9	0.0072	9811	71
10	DPE -HUP	8.6	0.0019	8613	16
11	HUP -MLU	9.4	0.0028	7600	21
12	MLU -CPL	5	0.0018	8200	15
13	CPL-REPI	Outside IV consideration			0
14	REPI - PKD	Outside IV consideration			0

OK  
 17/2/2018  
 मुख्य अभियंता/Chief Engineer  
 केंद्रीय विद्युत प्राधिकरण/C.E.A.  
 विद्युत मंत्रालय/Ministry of Power  
 भारत सरकार/Govt. of India  
 नई दिल्ली/New Delhi

Tele : 23019746

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

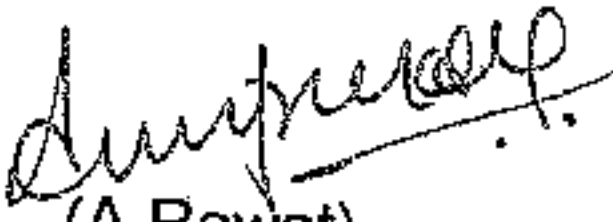
B/46937/Sigs 7(b)/1142 /

19 Jul 2018

Power Grid Corporation of India Ltd  
Construction Area Office  
H.No.05, Tirumala Nilaya,  
Near Swamy Vivekananda College  
Vijayanagara Layout, PA Vagada,  
Tumkur Dist. Karnataka - 561202

**CONSTRUCTION OF 400 KV DC PAVAGADA (TUMKUR POOL) -  
DEVANAHALLI TRANSMISSION LINE -SUBMISSION  
OF PTCC PROPOSAL - REG**

1. Reference your letter SR-II/PVGD-DVHL/400/Q/PTCC/2018 dt 23 Apr 2018.
2. No Objection Certificate (NOC) is accorded based on inputs provided vide Map sheet 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

**Copy to :-**

Central Electricity Authority  
Power Communication Development Division  
NRPC Complex, 18-A, Shaheed Jeet Singh S Marg  
Katwaria Sarai, New Delhi - 110016

- For information.