



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-891/2575-77

Date:11.12.2018

DET (PTCC),  
QA & Inspection (T&D) Circle, BSNL  
1 Floor, Raj Bhavan Exchange,  
No. 26, Sardar Patel Road,  
Guindy, Chennai – 600032

**Subject:** Induced Voltage Calculation in respect of PTCC proposal for 220 kV 1000 Sq. mm. UG Cable LILO from the existing 220 kV Peenya – Hoody D/C line to the proposed 220/66 kV HBR GIS Station in the premises of existing 66/11 kV HBR Station, Hennur Main Road

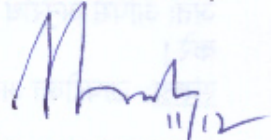
**Reference:** (i) BSNL letter no. SR-PTCC/SKT-2017/04 dated 27.02.2018  
(ii) South Western Railway letter no. SG/SWR/PTCC/F-2701/1703 dated 02.08.2018  
(iii) Defense letter no. B/46937/Sigs 7(b)/945 dated 14.03.2018

Sir,

The instant PTCC proposal has been examined. Low frequency induction on telecom cables of BSNL and Block & Telecom circuits of South Western Railway with respect to details furnished vide above references has been computed. The Soil Resistivity (SR) value has been taken as 25,000 Ohm-cm, as intimated by the Power Authority (KPTCL). The voltages likely to be induced on paralleling telecom cables of BSNL and Block & Telecom circuits of South Western Railway under Single Line to Ground fault condition have been computed and are enclosed as 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

m/c

  
(Naresh Bhandari)  
Chief Engineer

**Copy to:**

- 1) PCSTE, South Western Railway, Office of the Principal Chief Signal & Telecom Engineer, 1st Floor, West Block, Rail Soudha, Gadag Road, Hubli – 580020 (Annex – II only)
- 2) Chief Engineer Electricity, KPTCL, State Load Despatch Centre, No. 28, R.C. Cross Road, Bengaluru - 560009



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पावर कम्युनिकेशन डवलपमेंट प्रभाग

Power Communication Development Division

सं.: के.वि.प्रा./पीसीडी/पीटीसीसी/के.एन.के.-891 / 2575-77  
विभागीय अभियंता (दूरसंचार), पीटीसीसी,  
निरीक्षण एवं क्यू.ए. सर्किल, बी एस एन एल  
1 फ्लोर, राज भवन एक्सचेंज,  
नं. 26, सरदार पटेल रोड,  
गिंडी, चेन्नई - 600 032

दिनांक : 11.12.2018

**विषय:** मौजूदा 220 केवी हूडी - पीन्या डीसी लाइन से 220/66 केवी एच.बी.आर. जी.आई.एस. उपकेन्द्र पर 220 केवी 1000 Sq. mm. UG केबल द्वारा लीलो लाइन का पीटीसीसी रूट अनुमोदन - प्रेरित वोल्टेज गणना

**सन्दर्भ:** (i) बी.एस.एन.एल. सन्दर्भ सं. SR-PTCC/SKT-2017/04 दिनांक 27.02.2018  
(ii) दक्षिण पश्चिम रेलवे सन्दर्भ सं. SG/SWR/PTCC/F-2701/1703 दिनांक 02.08.2018  
(iii) रक्षा सन्दर्भ सं. B/46937/Sigs 7(b)/945 दिनांक 14.03.2018

महोदय,

तत्काल पीटीसीसी प्रस्ताव की जांच की गई है। उपर्युक्त संदर्भ में दिए गए विवरण के अनुसार, बीएसएनएल / रेलवे के दूरसंचार केबलों पर निम्न आवृत्ति प्रेरण की जांच की गई है। बिजली प्राधिकरण (KPTCL) द्वारा प्राप्त सूचना के अनुसार, मृदा प्रतिरोधकता 25,000 ओम-सेमी ली गयी है। सिंगल लाइन to ग्राउंड फाल्ट अवस्था में समानांतर बीएसएनएल एवं रेलवे के दूरसंचार केबलों पर प्रेरित वोल्टेज क्रमशः अनुलग्नक -I एवं II में संलग्न है। स्क्रीनिंग कारक का मान यथानुरूप लिया गया है। रक्षा प्राधिकरण ने उपरोक्त सन्दर्भ (iii) के द्वारा अनापत्ति प्रमाण पत्र जारी किया है। (अनुलग्नक- III में संलग्न)।

अतः आपसे अनुरोध है कि ट्रांसमिशन लाइन के लिए पीटीसीसी रूट अनुमोदन के संबंध में आवश्यक कार्रवाई करने की कृपा करें।

**संलग्न:** ऊपरोक्त अनुसार

आपकी आभारी,

(नरेश भंडारी)

मुख्य अभियन्ता

**कॉपी:**

- 1) प्र.मु.सं.एवं.दूरसं.अ, दक्षिण पश्चिम रेलवे, मुख्य संकेत व दूरसंचार अभियंता का कार्यालय, प्रथम मंजिल, पश्चिम विभाग, रेल सौधा, गडग सड़क, हुबली - 580020 (अनुलग्नक II केवल)
- 2) मुख्य अभियंता विद्युत, स्टेट लोड डिस्पैच सेंटर, #28, रेस कोर्स क्रॉस रोड, बेंगलुरु - 560009

## ANNEXURE - I

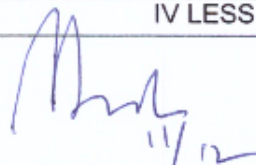
Case No.: KNK-891					
Name of the Power line: 220 kV 1000 Sq. mm. UG Cable LILO from the existing 220 kV Peenya – Hoody D/C line to the proposed 220/66 kV HBR GIS Station in the premises of existing 66/11 kV HBR Station, Hennur Main Road		Map Scale : 1cm=500mts Total Length : 3.670 km Average S.R. : 25,000 Ohm-cm			
S.No.	Telecom. Details	Length of Parallelism in Km.	Mutual Coupling in Ohms.	Effective Fault current in Amps.	I.V in Volts.

BSNL letter no. – SR-PTCC/SKT-2017/04 dated 27.02.2018					
1	<b>SAHAKARA NAGAR Exge (SHKR) UG cables</b>				
1	Exge to SH1(Bellary Road)	IV LESS THAN 430 V			
2	Exge to SH2(Kodigehalli)				
3	Exge to SH3(Towards Railway track)				
2	<b>AMRUTHAHALLI Exge(AH) UG cables</b>				
1	Exge to AH1(Amruthahalli Main Road)	IV LESS THAN 430 V			
2	Exge to AH2(Towards NH7)				
3	<b>DASARAHALLI Exge(DE) UG cables</b>				
1	Exge to DE1(Dasarahalli Main Road)	IV LESS THAN 430 V			
2	Exge to DE2(Coffee Board side)				
3	Exge to DE3(Bhuvaneshwari Ngr)				
4	<b>ASTRAZENLCA DLL Exge(AR) UG cables</b>				
1	Exge to AR1(Godrej Housing Complex)	OUT OF PARALLELISM			
2	Exge to AR2(Kempapura)				
5	<b>YELAHANKA Exge(YNK) UG cables</b>				
1	Exge to YN1(Judicial L/O)	IV LESS THAN 430 V			
2	Exge to YN2(Maruthi Nagar RSU)				
3	Exge to YN3(ATTUR L/O)	OUTSIDE IV CALCULATION CONSIDERATION ZONE			
4	Exge to YN4(Anantpur)				
5	Exge to Heritage DLL				
6	<b>HORAMAVU DLL Exge (HOR) UG cables</b>				
1	Exge to HO1(Babusapalya)	IV LESS THAN 430 V			
2	Exge to HO2(Horamavu Village)				
3	Exge to HO3(Kalkere)				
4	Exge to HO4(Horamavu E4)				
7	<b>BUTTERHALLI Exge (BTH) UG cables</b>				
1	Exge to BT1(Towards Hoskote)	IV LESS THAN 430 V			
2	Exge to BT2(NH4 KRP)				
3	Exge to BT3				

**ANNEXURE - I**

<b>Case No.: KNK-891</b>  <b>Name of the Power line: 220 kV 1000 Sq. mm. UG Cable LILO from the existing 220 kV Peenya – Hoody D/C line to the proposed 220/66 kV HBR GIS Station in the premises of existing 66/11 kV HBR Station, Hennur Main Road</b>		<b>Map Scale : 1cm=500mts</b> <b>Total Length : 3.670 km</b> <b>Average S.R. : 25,000 Ohm-cm</b>			
S.No.	Telecom. Details	Length of Parallelism in Km.	Mutual Coupling in Ohms.	Effective Fault current in Amps.	I.V in Volts.

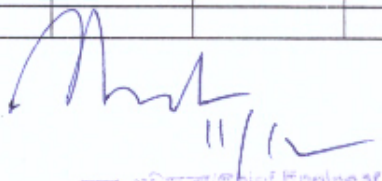
<b>8</b>	<b>RAMAMURTHY NAGAR Exge (RMN) UG cables</b>				
1	Exge to RM1(Towards ITI)				IV LESS THAN 430 V
2	Exge to RM2(Maragondana Halli)				
3	Exge to RM3(Channasandra)				
4	Exge to RM4(ITI factory)				
<b>9</b>	<b>KRISHNARAJAPURAM Exge (KRP) UG cables</b>				
1	Exge to KR1(CARUDACHARPALYA)				IV LESS THAN 430 V
2	Exge to KR2(Railway Bridge)				
3	Exge to KR3(Narayanapura Left side)				
4	Exge to KR4(Narayanapura Right side)				
<b>10</b>	<b>KOTHANUR Exge(KNR) UG cables</b>				
1	Exge to KNR1(Channasandra)				OUT OF PARALLELISM
2	Exge to KNR2(Horamavli)				
3	Exge to KNR3(Kamanahalli)				IV LESS THAN 430 V
4	Exge to KNR4(Narayanapura)				OUT OF PARALLELISM
<b>11</b>	<b>BABUSAPAIYA DLL Exge(BBP) UG cables</b>				
1	Exge to BP1(Horamavli)				IV LESS THAN 430 V

  
 Chief Engineer  
 Central Power Transmission C.E.A.  
 New Delhi, India  
 Sd/-  
 New Delhi-66

## ANNEXURE - II

Case No.: KNK-891					
Name of the Power line: 220 kV 1000 Sq. mm. UG Cable LILO from the existing 220 kV Peenya – Hoody D/C line to the proposed 220/66 kV HBR GIS Station in the premises of existing 66/11 kV HBR Station, Hennur Main Road		Map Scale : 1cm=500mts Total Length : 3.670 km Average S.R. : 25,000 Ohm-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 WESTERN RAILWAY</b> letter no. – SG/SWR/PTCC/F-2701/1703 dated 02.08.2018					
1	SBC – BNC	0.3	0.0001	10000	1
2	BNC – BYPL	0.15	0.0001	10000	1
3	KJM – SGWF	0.5	0.0001	10000	1
4	HEB – BAND	0.3	0.0011	10000	11
5	BYPL – BAND	OUT OF PARALLELISM			0
6	BYPL – CRLM				0
7	YNK – CSDR	2	0.0097	10000	97
8	YNK – LOGH	0.4	0.0004	10000	4

  
11/12  
मुख्य अभियंता/Chief Engineer of  
रेलवे विद्युत प्रणालियाँ/C.E.A.  
भारत खान, अरु.के. एम.  
Sector, Okhla, New Delhi-66

Tele : 23019746

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

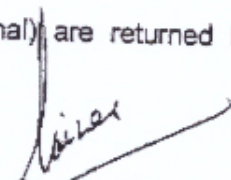
B/46937/Sigs 7(b)/945/

14 Mar 2018

✓  
Karnataka Power Transmission Corporation Limited  
Office of the  
Chief Engineer Electricity,  
State Load Despatch Centre  
# 28, R. C. Cross road,  
Bangaluru- 560 009

**PROPOSED 220KV 1000Sq MM UG CABLE LILO FROM THE  
EXISTING 220KV HOODY-PEENYA DEC LINES TO THE  
PROPOSED 220/66KV HBR GIS STATION IN THE PREMISES OF  
EXISTING 66/11KV HBR STATION, HENNUR MAIN ROAD, URBAN  
DISTRICT, BENGALURU**

1. Reference your letter No. CEE/SLDG/PTCC/F-2701/21631-39 dt 16 Jan 2018.
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.

  
(Nainee Sharma)  
Lt Col  
GSO 1 (Comn)  
for SO-in-C

**Copy to :-**

The Divisional Engineer Telegraph (PTCC) - For information.  
O/o GM (North) BSNL, Inspection circle  
CTS Compound, Africa Avenue  
Netaji Nagar, New Delhi - 110023

Received on email on 6.12.2018  
Prateek  
6/12/18