भारत सरकार

Government of India

विद्युत मंत्रालय

Ministry of Power

केन्द्रीय विद्युत प्राधिकरण

Central Electricity Authority

पावर कम्युनिकेशन डवलप्मेंट प्रभाग

Power Communication Development Division

No.:CEA/PCD/PTCC/KNK-902/303-305 Date:15.03.2019

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 DC line from proposed 400/220 kV SS at Jagalur (Hiremallanahole) to existing 220/66 kV Chitradurga SS**

Reference:
(i) BSNL letter no. SR-PTCC/SKT-2140/05 dated 26.12.2018
(ii) South Western Railway letter no. SG/SWR/PTCC/F-2764/1774 dated 12.07.2018
(iii) Defense letter no. B/46937/Sigs 7(b)/1191 dated 14.09.2018

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 Average 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 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

एन आर पी सी परिसर, कटवारिया सराय, नई दिल्ली-110016 टेलीफैक्स: 011-26565214 ईमेल: nbnareshbhandari@gmail.com
NRPC Building, Katwaria Sarai, New Delhi-110016 Telefax: 011-26565214 Email: nbnareshbhandari@gmail.com Website: www.cea.nic.in

ANNEXURE – I

Case No.: KNK-902 **Name of the Power line: 220 kV DC line from proposed 400/220 kV SS at Jagalur (Hiremallanahole) to existing 220/66 kV Chitradurga SS**	**Map Scale : 1cm=500mts** **Total Length : 35.645 km** **Average S.R. : 30,000 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-2140/05 dated 26.12.2018				
I	**(A) KAMANDALAGUNDI Exge UG cables**				
1	Exge to Dibbadahalli cross (A-A1)	OUT OF PARALLELISM			
2	Exge to CM Hole (A-A2)				
3	Exge to Thaitoni (A-A3)				
4	Exge to Mallapura (A-A4)				
II	**(B) MUSTURU Exge UG cables**				
1	Exge to Donnehalli (B-B1)	IV LESS THAN 430 V			
2	Exge to Siddihalli (B-B2)				
3	Exge to PGB Bank (B-B3)				
III	**(C) TURUVANUR Exge UG cables**				
1	Exge to Masanayakarhatti (C-C1)	4.6	0.0751	7000	526
2	Exge to Kumbevu (C-C2)	3.9	0.0841	6200	521
IV	**(D) BELGATTA Exge UG cables**				
1	Exge to Hayakallu (D-D1)	IV LESS THAN 430 V			
V	**(E) CHIKKAGONDANAHALLY Exge UG cables**				
1	Exge to Chikkapanhally (E-E1)	IV LESS THAN 430 V			
VI	**(F) HOSAKALLAHALLY Exge UG cables**				
1	Exge to Local DP (F-F1)	OUT OF IV CALCULATION CONSIDERATION ZONE			
VII	**(G) CHITRADURGA MBM Exge UG cables**				
1	Exge to Malappanhatty Road forest office (G-G1)	IV LESS THAN 430 V			
2	Exge to SJM College, HLK Road (G-G2)				
3	Exge to Gopala pura road (G-G3)				
4	Exge to Kelagote area (G-G4)	OUT OF PARALLELISM			
5	Exge to KHB colony Kelagote Area (G-G5)	IV LESS THAN 430 V			
6	Exge to Medihalli Village (G-G6)				
7	Exge to Kavadigarahatty Village (G-G7)				
8	Exge to Burujinahatty Area (G-G8)				
9	Exge to Anebagilu road Chikkapete Area (G-G9)				
VIII	**(H) CHITRADURGA JM RSU Exge UG cables**				
1	Exge to Kub muss station old NH-4 near (H-H1)	IV LESS THAN 430 V			
2	Exge to Madakari Circle (H-H2)				
3	Exge to Dwaraka Extension JM road (H-H3)	OUT OF PARALLELISM			
4	Exge to Stadium Road (H-H4)				
5	Exge to Chitradurga Fort Near (H-H5)				
IX	**(I) CHITRADURGA JCR RSU Exge UG cables**				
1	Exge to Pillekeranahalli Village near (I-I1)	IV LESS THAN 430 V			
2	Exge to Bank Colony Extension Area (I-I2)				
3	Exge to RTO office near (I-I3)				
4	Exge to SR Layout area (I-I4)	OUT OF PARALLELISM			

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

ANNEXURE – II

Case No.: KNK-902 Name of the Power line: 220 kV DC line from proposed 400/220 kV SS at Jagalur (Hiremallanahole) to existing 220/66 kV Chitradurga SS	Map Scale : 1cm=500mts Total Length : 35.645 km Average S.R. : 30,000 Ohm-cm

S.No.	Telecom. Details	Length of Parallelism in Km.	Mutual Coupling in Ohms.	Effective Fault current in Amps.	I.V in Volts.
	South Western Railway letter no. SG/SWR/PTCC/F-2764/1774 dated 12.07.2018				
1	Haliyuru (HLV) – Chitradurga (CTA)	OUT OF PARALLELISM			0
2	Chitradurga (CTA) – Balenahalli (BAHI)	3.75	0.0035	9000	32

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

Annex III

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)/1191/

14 Sep 2018

Chief Engineer (Electricity)
Karnataka Power Transmission Corporation Ltd
State Load Despatch Centre,
28, R.C. Cross Road
Bengaluru - 560009

PROPOSED 220KV DC LINE FROM PROPOSED (UNDER CONSTRUCTION) 400 KV SS AT JAGALUR (HIREMALLANAHOLE) TO THE EXISTING 220 KV SS AT CHITRADURGA IN CHITRADURGA DISTRICT

1. Ref your letter No CEE/SLDC/ PTCC/220 KV/F-2734/-3841-49 dt 08 Jun 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 - for information.
Power Communication Development Division
NRPC Complex, 18-A Shaheed Jeet Singh Marg
Katwaria Sarai, New Delhi - 110016

1087
11/X/18