



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-911A

Date : 07.02.2020

The Divisional Engineer Telecom (PTCC),
QA & Inspection (T&D) circle, BSNL,
1st floor, Raj Bhavan Exchange,
No.26, Sardar Patel Road,
Guindy, Chennai-600032

Subject: Induced Voltage Calculation in respect of PTCC proposal for 400 kV LILO line from one circuit of 400 kV DC Narendra (existing) – Narendra (new) line at Xeldem. (Karnataka portion)

Reference: (i) Goa-Tamnar Transmission Project limited letter no. GTTPL/PTCC/18-19/126 dated 12.11.2018
(ii) BSNL, Chennai letter no. SR-PTCC/KNK-3007/11 dated 12.06.2019
(iii) South Western Railway letter no. SG/SWR/PTCC/GTTPL/126/1820 dated 01.02.2019
(iv) Defence letter no. B/46937/Sigs 7(b)/1371 dated 01.01.2019

The PTCC proposal submitted vide ref. (i) has been examined. The low frequency induction on telecom cables of BSNL and Block & Telecom circuits of South Western Railway with respect to details furnished vide above references have been computed. The Soil Resistivity (SR) values have been taken as 5,000 & 25,000 Ohm-cm as per the measurements done by CEA's official during field visit. 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 are enclosed at Annex-I and Annex-II respectively. The screening factors, as applicable, have been considered. Vide ref. (iv) above, Defence Authority have issued No Objection Certificate (NOC) (a copy enclosed as Annex-III). Taking above into consideration, kindly take necessary action for PTCC route approval.

Encl.: As above

(Upendra Kumar)
Chief Engineer, PCD

Copy to:

- 1) PCSTE, South Western Railway, 1st floor, West Block, Rail Soudha, Gadag Road, Hubli - 580020 (Annex – II only)
- 2) Project Manager, Goa-Tamnar Transmission Projects Ltd, 105, 1st floor, Rithupama Regency, Kalghatgi Road, Saraswatpur, Dharwad, Karnataka – 580001.

CEA case no: KNK-911A

Case No. KNK-3007		SSA: Karwar, Belgavi, Hubli			
Name of PWR line:		400 KV LILO line from 400 KV DC line from existing 400/230 KV Narendra Substation to proposed 400 KV Kudgi Substation to proposed 400 KV SS at Xeldem (Karnataka portion)			
Length:	77.63 Km (KAR portion)	93.95 Kms			
Average SR value: (5000 & 25000) ohm cms					
Type of BSNL cable: PIJF cable					
Sl.No.	Name of Telecom line	LOP in KMs	Mutual Coupling in ohms	FC in Amps	IV in Volts
Karwar SSA topomap telecom details					
I. A1 Anmod Exge UG cables					
1	Exge to Ramanagar A1-A2	2.25	0.0337	11600	390
2	Exge to Aketi village A1-A3	IV less than 430 V			
II. B1 Castle Block Exge UG cables					
1	Exge to Grampanchayat B1-B2	} IV less than 430V			
2	Exge to Rly station B1-B3				
III. C1 Thinnaighat Exge UG cables					
1	Exge to Devali C1-C2	} IV less than 430V			
2	Exge to Post office C1-C3				
IV. D1 Ramnagar Exge UG cables					
1	Exge to Joida D1-D2	} IV less than 430V			
2	Exge to Church D1-D3				
3	Exge to Thanaighat D1-D4				
4	Exge to Dharwad D1-D5				
Belagavi SSA topo map - telecom details					
V. A Londa Exge UG cables					
1	Exge to Goa Rd I 13 A-A1	} IV less than 430V			
2	Exge to Fish Market A-A2				
3	Exge to Indira DP A-A3				

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VI. B	Halga Khanapur Exge UG cables				
	1 Exge to Nagarhgali Rd B-B1	}	IV less than	430V	
	2 Exge to Halaga village Limit B-B2				
VII. C	Gunji Exge UG cables				
	1 Exge to Kalakaveri DP C-C1	}	IV less than	430V	
	2 Exge to Railway Station C-C2				
	3 Exge to Rice Mill DP C-C3				
VIII. D	Bidi Exge UG cables				
	1 Exge to Shamsher Building D-D1	}	IV less than	430V	
	2 Exge to Bazar Limit D-D2				
	3 Exge to Tasevali Limit D-D3				
	4 Exge to Bowi D-D4				
	5 Exge to Gousekor DP D-D5				
	6 Exge to Hindalagi cross D-D6				
IX. E	Kakkeri Exge UG cables				
	1 Exge to Bistamina Temple E-E1	}	IV less than	430V	
	2 Exge to Bistamina Temple Churchwad cross E-E2				
X. F	Kittur Exge UG cables				
	1 Exge to Dombarkoppa F-F1	}	IV less than	430V	
	2 Exge to Nichanaki F-F2				
	3 Exge to Kittur Bus stand F-F3				
	4 Exge to KRC School F-F4				
	5 Exge to Kittur Local (I.O.C) F-F5				
XI. G	Bailur Exge UG cables				
	1 Exge to Bailur GP G-G1	}	IV less than	430V	
	2 Exge to Bailur Local G-G2				

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	Hubli SSA Topo map details				
XII. S	Dharwad Saptapur Exge UG cables				
1	Exge to Kelagere-Anjaneya Nagar S-S2-S5	} Out of Parallelism			
2	Exge to Narayanpur S-S2-S6				
3	Exge to Srinagar S-S1-S3				
4	Exge to Kyarkoppa S-S3-S4				
XIII. F	Dharwad Main Exge UG cables				
1	Exge to KCD Road F-F1	} Out of Parallelism			
2	Exge to K.C.Park F-F8				
3	Exge to Agri College Gate F-F7				
4	Exge to Malapur F-F2				
5	Exge to Kamalapur F-F3				
6	Exge to Madihal F-F4				
7	Exge to Hebballi Agasi road F-F6				
XIV. H	Dharwad Agri college Exge UG cables				
1	Exge to New Admn Bldg. H-H1	} Out of Parallelism.			
2	Exge to Old Admn Bldg-UAS international Guest House H-H2-H3				
3	Exge to Bio Tech Bldg & SBI H-H4				
XV. B	Belur Exge UG cables				
1	Exge to Main Building B-B1-B2-B3	} IV less than 430V			
2	Exge to Bus stop B-B4				
3	Exge to IIT B-B5-B6				
4	Exge to Rashtrodyan School B-B7-B8				
5	Exge to Mummigatti B-B7-B9				
6	Exge to Belur Village B-B10-B11				
7	Exge to BPCL Road B-B10-B12-B13				
8	Exge to Ashwi walls B-B10-B12-B14				
					मुख्य अभियंता / Chief Engineer केन्द्रीय विद्युत प्राधिकरण / C.E.A. विद्युत मंत्रालय / Ministry of Power भारत सरकार / Govt. of India नई दिल्ली / New Delhi

	9 Exge to Old HILL B-B10-B16	}	IV	less	than	430 V		
	10 Exge to RSB cross B-B15							
	11 Exge to ADM Agro B-B17							
XVI. G	Garag Exge UG cables							
	1 Exge to MM Industries G-G1	}	IV	less	than	430V		
	2 Exge to Tadakod G-G2-G3							
	3 Exge to Hangaraki G-G2-G4							
XVII. M	Madanbhavi Exge UG cables							
	1 Exge to Mugali Joint M-M1	}	IV	less	than	430V		
	2 Exge to Hale Tegur M-M2-M3							
	3 Exge to Highway cross M-M2-M4							
XVIII. N	Narendra Exge Ug cables							
	1 Exge to Peti Oni N-N1-N2	Out of Parallelism						
	2 Exge to Mangalgatti N-N1-N3-N4	2.05	0.0451	14000	632			
	3 Exge to Dasankoppa N-N3-N5	}						
	4 Exge to Malligwad N-N6-N7							
	5 Exge to Basvaraj Colony N-N6-N8							
	6 Exsge to Airtech Pvt. Ltd. N-N6-N9	Out of Parallelism						
XIX. U	Uppinbetageri Exge UG cables							
	1 Exge to Yadwad U-U1-U2	}	IV	less	than	430V		
	2 Exge to Sibargatti U-U1-U3							
	3 Exge to Jigriwad U-U5							

(4)

JK

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Case No.: KNK- 911A					
Name of the Power Line : 400 KV LILO line from one circuit of 400 KV DC Narendra (existing) - Narendra (new) line at Xeldem. (Karnataka-portion)		Map Scale : 1 cm = 500 mtrs. Route Length : 77.63 km Soil Resistivity : 5,000 & 25,000 Ohm-cm			
S.No.	Telecom Details	Length of Parallelism (in km)	Mutual Coupling (Ohms)	Fault Current (Amps)	Induced Voltage (Volts)

SOUTH WESTERN RAILWAY					
Ref. No: SG/SWR/PTCC/GTTPL/126/1820			DATED: 01-02-2019		
Affected Blocks & Telcom Circuits Details					
1	DWR to KRKP	OUT OF PARALLELISM			0
2	KRKP to MGD	4.5	0.0061	13720	84
3	MGD to KBI	5.4	0.0001	9890	1
4	KBI to KHST	OUT OF PARALLELISM			0
5	KHST to LWR	OUTSIDE IV CONSIDERATION ZONE			0
6	LWR to TVG	OUTSIDE IV CONSIDERATION ZONE			0
7	TVG to NAG	OUTSIDE IV CONSIDERATION ZONE			0
8	NAG to DEV	3	0.0006	7978	5
9	DEV to SVTN	4.8	0.0071	7990	57
10	SVTN to LD	5	0.0106	7980	85
11	LD to GNJ	3.75	0.0078	8940	70
12	GNJ to KNP	OUT OF PARALLELISM			0
13	LD to TGT	8.25	0.0074	10220	76
14	TGT to CLR	8.6	0.0098	10210	100
15	CLR to CRZ	3.5	0.0007	11490	8

Urc

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Tele : 23019746

Annex-III

KNK-511A

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

B/46937/Sigs 7(b)/1371/

01 Jan 2019

Project Manager
Goa-Tamnar Transmission Project Limited
105, 1st Floor, Rithuparna Regency,
Kalghatgi Road, Saraswatpur, Dharwad-580001

**SUBMISSION OF PTCC ROUTE APPROVAL WITH REFERENCE TO INSTALLATION OF 400KV
D/C XELDEM (NEW)-NARENDRA TRANSMISSION LINE (LILO OF ONE CKT OF NARENDRA
(EXISTING)-NARENDRA (NEW) 400KV D/C QUAD LINE AT XELDEM (NEW)**

1. Ref your letter No GTTPL/PTCC/18-19/126 dt 12 Nov 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 forwarded herewith for your further 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.