



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/TN-664 /561-63

Date:10.05.2019

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

**Subject:** Induced Voltage Calculation in respect of PTCC proposal of 400 kV DC (Quad) Transmission Line from Kalivanthapattu substation to Ottiyambakkam substation

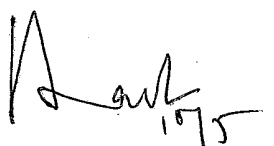
- Ref:** i) BSNL letter no. SR-PTCC/STN-1943/05 dated 05.04.2018  
ii) Southern Railway letter no. W.384/3/2/1165 dated 18.12.2017  
iii) Defence letter no. B/46937/Sigs 7(b)/1282 dated 05.02.2019

Sir,  
The instant PTCC proposal has been examined. The low frequency induction on telecom cables of BSNL and Block & Telecom circuit of Southern Railway with respect to details furnished vide above references have been computed. The Soil Resistivity (SR) value has been taken as 25,000 Ohm-cm. The voltages likely to be induced on paralleling telecom cables of BSNL and Block & Telecom circuit of Southern 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, Defence Authority has given 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

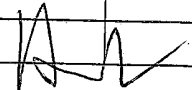
  
(Naresh Bhandari)  
Chief Engineer

Copy to:

- i) GM, S & T, Southern Railway, Head Quarters Office, S&T Branch, Chennai-600003 (Annexure – II only)  
ii) Superintending Engineer, Transmission-I, Tamilnadu Transmission Corporation Ltd, 6<sup>th</sup> Floor, No. 144, Annasalai, Chennai - 600002

CEA Case No.: TN-664

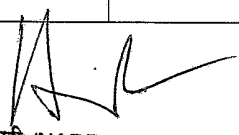
Ca No. STN-1943		SSA: Chennai Telephones			
Name of the power line		Proposed 400 KV DC line with Quad moose ACSR from Kalivanthapatu 400 KV SS to Ottiyambakkam 400 KV SS in Kanchipuram District.			
Length:	26.981 Kms	MOP scale:		1cm = 500 mts	
SR value : 25,000 ohm cms		Type of BSNL telecom cable : PIJF			
Sl.No.	Name of Telecom line	LOP in KMs	MC in Ohms	FC in Amps	IV in Volts
I	<b>KAYARAMBEDU Exge UG cables</b>				
	Exge to KYU Road Pillar to Perumattunallur Pillar	}	IV	LESS	THAN 430 V
1					
2	Exge to Kannivakkam to Parandur Village				
3	Exge to Kalivandapattu				
4	Exge to Sri Ram Sankar Apartments	}	OUT	OF	PARALLELISM
II	<b>MAMBAKKAM Exge UG cables</b>				
1	Exge to Ponmar Pillar	}	IV	LESS	THAN 430 V
2	Exge to Sonallur Pillar				
3	Exge to Kulathur Pillar				
4	Exge to Melkottayur Pillar				
III	<b>KELAMBAKKAM Exge UG cables</b>				
1	Exge to Pillar 1	}	IV	LESS	THAN 430V
2	Exge to Pillar 10				
IV	<b>BUTTERFLY DLC Exge UG cables</b>				
1	Exge to Jagram Company	-	IV	LESS	THAN 430V
V	<b>SIRUSERI EXGE UG cables</b>				
1	Exge to Pillar 2	}	IV	LESS	THAN 430 V
2	Exge to Pillar 12(Cognizant)				
3	Exge to Pillar 11				
4	Exge to Pillar 10				
5	Exge to Pillar 6				
6	Exge to Pillar 8				
VI	<b>THIRUPORUR EXGE UG cables</b>				
1	Exge to Theppakulam Pillar	}	IV	LESS	THAN 430 V
2	Exge to Roundana Pillar				
3	Exge to Sembakkam Pillar				
4	Exge to Illalur Pillar				
VII	<b>NELLIKUPPAM EXGE UG cables</b>				
1	Exge to Pillar 21	}	IV	LESS	THAN 430 V
2	Exge to Vembedu Pillar				

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

## ANNEXURE - II

Case No: <b>TN-664</b>					
Name of the Power Line: 400 kV DC (Quad) Transmission Line from Kalivanthapattu substation to Ottiyambakkam substation		Map Scale : 1cm=500mts Total Length : 26.981 km Soil Resistivity : 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.

Southern Railway letter no. - W.384/3/2/1165 dated 18.12.2017					
<b>Block and Telecom Circuit details</b>					
1	Urapakkam (UPM) - Gudvancherri (GI)	OUT OF PARALLELISM			0
2	Gudvancherri (GI) - Katankulattur (CTM)				0
3	Katankulattur (CTM) - Singapermalkoil (SKL)				0

  
 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

Tele : 23019746

TN-664

*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)/1282/

05 Feb 2019

Superintending Engineer/Transmission-I&Secretary/  
Power, SLPTCC,  
Tamil Nadu Transmission Corporation Limited  
6<sup>th</sup> Floor, No. 144, Annasalai  
Chennai-600 002

**PTCC PROPOSAL-400KV DC LINE ON DC TOWERS WITH QUAD MOOSE ACSR FROM  
KALIVANTHAPATTU 400KV SS TO OTTIYAMBAKKAM 400KV SS-REG**

1. Ref your letter No Lr. No. SE/TR-I/EM/A1/F.PTCC/D.No 235/17 dt 04 Dec 2017 (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.

*(Signature)*  
(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.