



भारत सरकार

Government of India

विद्युत मंत्रालय

Ministry of Power

केन्द्रीय विद्युत प्राधिकरण

Central Electricity Authority

पावर कम्युनिकेशन डेवलपमेंट प्रभाग

Power Communication Development Division

No./CEA/PCD/PTCC/TN-670/162-164

Date : 11.02.2019

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 Orange Sironj Wind generation switchyard – Tirunelveli PS 230 kV S/C Line

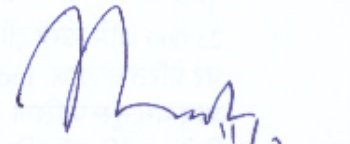
Reference: i) BSNL letter no. SR-PTCC/TN-1719/09 dated 16.10.2018
ii) Southern Railway letter no. W.384/3/2/1177 dated 09.08.2018

Sir,

The instant PTCC proposal has been examined. The low frequency induction on telecom cables of BSNL and Block & Telecom circuits of Southern Railway with respect to details furnished vide above references have been computed. The Average Soil Resistivity (SR) value has been taken as 20,000-25,000 Ohm-cm, as intimated by the Power authority. The voltages likely to be induced on paralleling telecom cables of BSNL and Block & Telecom circuits of Southern Railway under Single Line to Ground fault condition are enclosed at Annex-I & II respectively. The screening factors, as applicable, have been considered. Telecommunication details from Defense are pending and the power authority has shown urgency for charging the line. In view of this, you are requested to issue provisional PTCC route approval.

Encl.: As above

m/c


(Naresh Bhandari)
Chief Engineer

Copy to:

1. GM(S&T), Southern Railway, Headquarters Office, S&T Branch, Chennai – 600003
2. M/s Orange Sironj Wind Power Private Limited, F-9, 1st Floor, Manish Plaza-1, Plot No. 7, MLU, Sector-10, Dwarka, New Delhi - 110075

ANNEXURE - I

| | | | | |
|---|------------------------------|--------------------------|----------------------------------|---------------|
| Case No.: TN-670 | Map Scale | : 1cm=500mts | | |
| | Total Length | : 27.11 Km. | | |
| Name of the Power line: Orange Sironj Wind generation switchyard – Tirunelveli PS 230 kV S/C Line | Avg. Soil Resistivity | : 20000 – 25000 ohm-cm | | |
| | | | | |
| 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/TN-1719/09 dated 16.10.2018

| BSNL letter no. – SR-PTCC/TN-1719/09 dated 16.10.2018 | | | | | | |
|---|--|------|--------|--------------------|--------------------|-----|
| I DURAIYUR Exge UG Cable | | | | | | |
| 1 | Exge to Mudukkalankulam(DP0006) | | | IV LESS THAN 430 V | | |
| 2 | Exge to Kasavankundru(DP2104) | | | OUT OF PARALLELISM | | |
| 3 | Exge to T. Shanmugapuram(DP2103) | | | IV LESS THAN 430 V | | |
| 4 | Exge to Koppampatti(DP2101) | | | | | |
| 5 | Exge to Salnaikanpatti(DP2102) | | | | | |
| II PASUVANDANAI EXGE UG CABLES | | | | | | |
| 1 | Exge to DP0007 | | | IV LESS THAN 430 V | | |
| 2 | Exge to DP0006 | | | | | |
| 3 | Exge to DP0005 B | | | | | |
| 4 | Exge to DP0013 B | | | | | |
| 5 | Exge to DP0013 | | | | | |
| 6 | Exge to DP0008 | | | | | |
| 7 | Exge to DP0009 | | | | | |
| 8 | Exge to DP0010 | | | | | |
| 9 | Exge to DP0025 | | | | | |
| 10 | Exge to DP0036 | | | | | |
| 11 | Exge to DP0035 | | | | | |
| 12 | Exge to DP0034 | 4.15 | 0.0587 | | 8000 | 470 |
| 13 | Exge to DP0033 | 4.15 | 0.0587 | | 8000 | 470 |
| 14 | Exge to DP0032 | 4.55 | 0.0624 | | 8000 | 499 |
| 15 | Exge to DP0031 | 5.45 | 0.0759 | | 8000 | 607 |
| 16 | Exge to DP0018 | | | | | |
| 17 | Exge to DP0017 | | | | | |
| 18 | Exge to DP0016 | | | | | |
| 19 | Exge to DP0015 | | | | IV LESS THAN 430 V | |
| 20 | Exge to Kappikulam(DP0004) | | | | | |
| 21 | Exge to Kilmudiman(DP0003) | | | | | |
| 22 | Exge to Kuppanapuram(DP0001) | 6.3 | 0.1009 | 6000 | 605 | |
| 23 | Exge to HP Gas(DP0012B) | | | | IV LESS THAN 430 V | |
| 24 | Exge to Duraisampuram(DP0012) | | | | | |
| III OTTAPIDARAM EXGE UG CABLES | | | | | | |
| 1 | Exge to Parambur Pillar 21 to Mettupucheri (DP 2102) | | | | IV LESS THAN 430 V | |
| 2 | Exge to Parambur Pillar 21 to Taluk Office (DP 2110) | | | | | |
| 3 | Exge to Parambur Pillar 21 to Suzlon (DP 2107) | | | | | |
| 4 | Exge to Parambur Pillar 21 to Kerala Pannai(DP 2108) | | | | | |



ANNEXURE - I

| | | | | | |
|--|-------------------------|---|---------------------------------|---|----------------------|
| Case No.: TN-670 | | Map Scale : 1cm=500mts | | | |
| Name of the Power line: Orange Sironj Wind generation switchyard – Tirunelveli PS 230 kV S/C Line | | Total Length : 27.11 Km. | | | |
| | | Avg. Soil Resistivity : 20000 – 25000 ohm-cm | | | |
| | Telecom. Details | Length of Parallelism in Km. | Mutual Coupling in Ohms. | Effective Fault current in Amps. | I.V in Volts. |

| | | | | | |
|----|--|--------------------|--------|------|-----|
| 5 | Exge to Osamuthu Pillar 23 to Kulasekaranallur Jn (DP 2317) | IV LESS THAN 430 V | | | |
| 6 | Exge to Osamuthu Pillar 23 to Kulasekaranallur Jn (DP 2318) | | | | |
| 7 | Exge to Osamuthu Pillar 23 to Araikkulam (DP 2320A) | 4.8 | 0.0749 | 7500 | 562 |
| 8 | Exge to Osamuthu Pillar 23 to Araikkulam Parachari(DP 2320B) | 5.05 | 0.0836 | 7500 | 627 |
| 9 | Exge to Osamuthu Pillar 23 to Kombadi (DP 2306) | IV LESS THAN 430 V | | | |
| 10 | Exge to Osamuthu Pillar 23 to Dalavaipuram (DP 2308) | | | | |
| 11 | Exge to Osamuthu Pillar 23 to Kandaswamipuram (DP 2310) | | | | |
| 12 | Exge to Muppulipatti Pillar 22 to Muppulipatti Colony(DP 2220) | | | | |
| 13 | Exge to Ottapidaram Pillar 41 to Indira Gandhi School (DP 4105) | | | | |
| 14 | Exge to Police station Pillar 31 to Panjalankurichi Colony(DP 3110) | | | | |
| 15 | Exge to Police station Pillar 31 to Chalikulam Putturu Murugan Kovil(DP3107 B) | | | | |
| 16 | Exge to Police Station Pillar 31 to Venkateswarampuram (DP 3108) | | | | |
| 17 | Exge to Police Station Pillar 31 to Kelamudinan(DP 3106) | | | | |
| 18 | Exge to Police Station Pillar 31 to Kelamudinan Lasalle School (DP 3103) | | | | |
| 19 | Exge to Police Station Pillar 31 to Melamudinan(DP 3102) | | | | |
| 20 | Exge to Thoranavoil Pillar 32 to DP3209 | | | | |
| 21 | Exge to Thoranavoil Pillar 32 to Governagiri (DP3208) | | | | |
| 22 | Exge to Thoranavoil Pillar 32 to Vellaran (DP 3206) | | | | |
| 23 | Exge to Thoranavoil Pillar 32 to Panjalankurichi(DP 3210) | | | | |
| 24 | Exge to Thoranavoil Pillar 32 to Vadakku Avarankadu(DP3204) | | | | |
| 25 | Exge to Thoranavoil Pillar 32 to Terku Avarankadu (DP3203) | | | | |

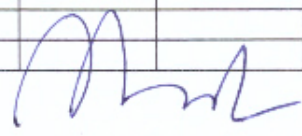


नरेश भंडारी/NARESH BHANDARI
 मुख्य अभियन्ता/Chief Engineer
 केन्द्रीय विद्युत प्राधिकरण/C.E.A.
 विद्युत मंत्रालय/Ministry of Power
 भारत सरकार/Govt. of India
 नई दिल्ली/New Delhi-66

ANNEXURE – I

| | | | | | |
|---|-------------------------|---|---------------------------------|---|----------------------|
| Case No.: TN-670 Name of the Power line: Orange Sironj Wind generation switchyard – Tirunelveli PS 230 kV S/C Line | | Map Scale : 1cm=500mts Total Length : 27.11 Km. Avg. Soil Resistivity : 20000 – 25000 ohm-cm | | | |
| | Telecom. Details | Length of Parallelism in Km. | Mutual Coupling in Ohms. | Effective Fault current in Amps. | I.V in Volts. |

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|---|--|--------------------|--------|-------|-----|
| 26 | Exge to Thoranavoil Pillar 32 to Akhilandapuram (DP3202) | IV LESS THAN 430 V | | | |
| 27 | Exge to Thoranavoil Pillar 32 to VSM Panchai Dairy Milk (DP3201) | | | | |
| IV PUTHIYAMPUTHUR EXGE UG CABLES | | | | | |
| 1 | Exge to Pillar 31 to DP 3123 | IV LESS THAN 430 V | | | |
| 2 | Exge to Pillar 31 to Pillar 31 A to DP 31A06 | | | | |
| 3 | Exge to Pillar 31 to Pillar 31 A to DP 31A05 | | | | |
| 4 | Exge to Pillar 31 to Pillar 31 A to DP 31A03 | | | | |
| 5 | Exge to Pillar 31 to Pillar 31 A to DP 31A02 | | | | |
| 6 | Exge to Pillar 31 to DP3107 | | | | |
| 7 | Exge to Pillar 31 to DP3102 | 3.0 | 0.0571 | 10000 | 571 |
| 8 | Exge to Pillar 31 to DP3104 | IV LESS THAN 430 V | | | |
| 9 | Exge to Pillar 31 to pillar 31B to DP 31B37 | | | | |
| 10 | Exge to DP1Z0004 | | | | |
| 11 | Exge to DP1Z0005 | | | | |
| 12 | Exge to DP1Z0011 | | | | |
| 13 | Exge to DP1Z0014 | | | | |
| 14 | Exge to DP1Z0015B | | | | |
| 15 | Exge to DP1Z0015 | | | | |
| 16 | Exge to Pillar 21 to DP2115 | | | | |
| 17 | Exge to Pillar 21 to DP2112 | | | | |
| 18 | Exge to Pillar 21 to DP2120 | | | | |
| 19 | Exge to Pillar 21 to DP2117 | | | | |
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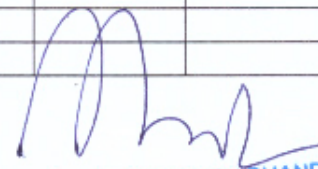


नरेश भंडारी / NARESH BHANDARI
 मुख्य अभियंता / Chief Engineer
 केन्द्रीय विद्युत प्राधिकरण / C.E.A.
 विद्युत मंत्रालय / Ministry of Power
 भारत सरकार / Govt. of India
 नई दिल्ली / New Delhi-66

ANNEXURE – II

| | | | | | |
|---|--|---|---------------------------------|---|----------------------|
| Case No.: TN-670 Name of the Power line: Orange Sironj Wind generation switchyard – Tirunelveli PS 230 kV S/C Line | | Map Scale : 1cm=500mts Total Length : 27.11 Km. Avg. Soil Resistivity : 20000-25000 ohm-cm | | | |
| 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.384/3/2/1177 dated 09.08.2018 | | | | | |
|--|--------------------------------|------|--------|-------|----|
| 1 | Vanchi Maniachi - Kailasapuram | 4.25 | 0.0028 | 8800 | 25 |
| 2 | Kailasapuram – Tittapari | 3.25 | 0.0043 | 10000 | 43 |
| 3 | Tittapari - Melavittan | 0.25 | 0.0002 | 10000 | 2 |
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 नरेश भंडारी / NARESH BHANDARI
 मुख्य अभियंता / Chief Engineer
 केन्द्रीय विद्युत प्राधिकरण / C.E.A.
 विद्युत मंत्रालय / Ministry of Power
 भारत सरकार / Govt. of India
 नई दिल्ली / New Delhi-66