



सत्यमेव जयते

भारत सरकार
Government of India
विद्युत मंत्रालय
Ministry of Power
केन्द्रीय विद्युत प्राधिकरण
Central Electricity Authority
विद्युत प्रणाली संचार विकास प्रभाग
Power System Communication Development Division

| | | |
|---|--|--------------|
| CEA Case No.: KNK-948 | | |
| Induced Voltage (IV) calculation in respect of PTCC proposal for 220 kV S/C Underground Transmission Line from 220 kV Hoody S/s to 220 kV Hagardu S/s in Bangalore South Taluk. (Length- 7.77 km)- Regd. | | |
| S. No | Reference No. | Dated |
| (i) | KPTCL: CEE/SLDC/PTCC/F-3095/6576-85 | 29.09.2020 |
| (ii) | KPTCL: e-Mail | 08.07.2025 |
| (iii) | BSNL:SR-PTCC/F-3095/5 | 19.06.2025 |
| (iv) | South Western Railway: SG/SWR/PTCC/F-3095/2087 | 26.11.2020 |
| (v) | Defense: B/46937/Sigs7(b)/2182 | 29.12.2020 |

The PTCC proposal submitted vide reference (i) & (ii) has been examined. The LF induction on Block and Telecom circuits of BSNL & South Western Railway with respect to details furnished vide above reference (iii) & (iv) has been computed. The voltage likely to be induced on paralleling Block and Telecom circuits of BSNL & South Western Railway under Single Line to Ground fault condition are enclosed at Annexure-I & Annexure-II respectively. The screening factors as applicable have been considered. DG Signals, MoD has issued No Objection Certificate (NOC) vide reference (v).

EPR Zones for proposed substations are mentioned below.

| Name of the proposed SS | Half Diagonal Distance, D/2 (mts) | Fault Current, I (kA) | Resistance of earthmat, R (Ohms) | d (mts) at 430 V | d (mts) at 650 V | d (mts) at 7 kV | d (mts) at 10 kV |
|-------------------------|-----------------------------------|-----------------------|----------------------------------|------------------|------------------|-----------------|------------------|
| 220kV Hagaduru S/s | 58 | 37.5 | 0.24 | 1156 | 745 | 17 | N.A |

As per the details submitted by BSNL vide reference (iii) above, no telephone exchanges are falling in the EPR zone of the proposed substation.

Taking above into consideration, necessary action for issuance of PTCC route approval (RAC) shall be taken under intimation to this office in the stipulated period as specified in PTCC Manual and subsequent CLPTCC meetings.

As per the decision taken in 111th and 112th CLPTCC meeting, necessary instructions for "Deemed Energization approval" shall be specified while issuing RAC.

Chief Engineer

To,

| | | | |
|----|---|--|----------------------|
| 1. | Divisional Engineer Telecom (PTCC), Southern Zone | BSNL, Inspection Circle, 2nd Floor, Sanchar Complex, WMS Compound, Jayanagar 5th Block, 9th Main, 47th Cross ,Bangalore-560041 | |
| 2. | PCSTE/SWR | Principal Chief Signal & Telecom Engineer, Rail Soudha, Gadag Road, Hubballi-580020 | |
| 3. | Member(Power), KPTCL | Chief Engineer Electricity, SLDC #28, Race Course Road, Bengaluru-560009 | Copy for information |

ANNEXURE-I

| CEA Case No.: KNK-948 | | | Map Scale : 1 cm= 500 m | | |
|---|-------------------------|-------------------------------------|----------------------------------|---|----------------------|
| Name of the Power line: 220 kV S/C Underground Transmission Line from 220 kV Hoody S/s to 220 kV Hagardu S/s in Bangalore South Taluk. | | | Total Length : 7.77 km | | |
| | | | S.R. Value : 30000 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/F-3095/5 | | Dated 19.06.2025 | | | |
| Brookfield Exchange | | | | | |
| 1. | Brookfield Exchange to Kundanhalli | -Out of Parallelism- | | | |
| 2. | Brookfield Exchange to Graphite India | | | | |
| 3. | Brookfield Exchange to AESC Layout | | | | |
| Whitefield Exchange | | | | | |
| 1. | Whitefield Exchange to Kadugodi bride | IV Less than 430 V | | | |
| 2. | Whitefield Exchange to Hope Farm Junction | | | | |
| 3. | Whitefield Exchange to Bridge tech road | | | | |
| 4. | Whitefield Exchange to Nallurahali | | | | |
| 5. | Whitefield Exchange to Immadahalli Road | | | | |
| Varthur Exchange | | | | | |
| 1. | Varthur Exchange to Madhuranagar | -Out of Parallelism- | | | |
| 2. | Varthur Exchange to Balegere | | | | |
| 3. | Varthur Exchange to Gunjur | | | | |
| 4. | Varthur Exchange to Halasahalli | | | | |
| Avalahalli Exchange | | | | | |
| 1. | Avalahalli Exchange to Virgonagar | -Out of Parallelism- | | | |
| 2. | Avalahalli Exchange to Virenahalli | | | | |
| 3. | Avalahalli Exchange to herandahalli | | | | |
| 4. | Avalahalli Exchange to Bandapura | | | | |
| 5. | Avalahalli Exchange to Cheemasandra | | | | |
| 6. | Avalahalli Exchange to Katamnallur Gate | | | | |
| Vijetha DLC Exchange | | | | | |
| 1 | Vijetha DLC to Vinayakanagara | IV Less than 430 V | | | |

| Prestize DLC Exchange | | |
|------------------------------|---|----------------------|
| 1 | Prestize Ozone DLC to POZ Gate 2 | -Out of Parallelism- |
| Domlure Exchange | | |
| 1. | Domluru Exchange to ISRO Quarters | -Out of Parallelism- |
| 2 | Domluru Exchange to Karnataka Golf Association | |
| 3 | Domluru Exchange to Madhurai Idli | |
| 4 | Domluru Exchange to Ranka Heights Apartments | |
| 5 | Domluru Exchange to Near Srinidhi Sagar Hotel | |
| 6 | Domluru Exchange to Viveswaryya Kendrya Bhawan Back side | |
| Indranagar Exchange | | |
| 1. | Indranagar Exchange to SBI Jab Nagar | -Out of Parallelism- |
| 2 | Indranagar Exchange to Kodihalli Leela Palace | |
| 3 | Indranagar Exchange to BESCOM-6 | |
| 4 | Indranagar Exchange to Domlure Exchange | |
| 5 | Indranagar Exchange to Dopanhali | |
| 6 | Indranagar Exchange to New Horizon School | |
| 7 | Indranagar Exchange to Abedkar college | |
| 8 | Indranagar Exchange to KFC Signal | |
| 9 | Indranagar Exchange to Opp 100 Feet Road Post | |
| 10 | Indranagar Exchange to New thipesendra Park | |
| 11 | Indranagar Exchange to New thipesendra Temple | |
| 12 | Indranagar Exchange to SVR Metro station | |

ANNEXURE-II

| CEA Case No.: KNK-948 Name of the Power line: 220 kV S/C Underground Transmission Line from 220 kV Hoody S/s to 220 kV Hagaradu S/s in Bangalore South Taluk. | | | Map Scale : 1 cm= 500 m Total Length : 7.77 km S.R. Value : 30000 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-3095/2087 | | | | | Dated 26.11.2020 | |
| 1. | KSR Bengaluru to Bengaluru Cantonment | -Out of Parallelism- | | | | |
| 2 | Bengaluru Cantonment to Bengaluru - East | -Out of Parallelism- | | | | |
| 3 | Bengaluru – East to Baiyyappanahalli | -Out of Parallelism- | | | | |
| 4 | Baiyyappanahalli to Banaswadi | -Out of Parallelism- | | | | |
| 5 | Banaswadi to Hebbal | -Out of Parallelism- | | | | |
| 6 | Baiyyappanahalli to Krishnarajapuram | -Out of Parallelism- | | | | |
| 7 | Baiyyappanahalli to Channasandra | -Out of Parallelism- | | | | |
| 8 | Channasandra to Yelhanka | -Out of Parallelism- | | | | |
| 9 | Krishnarajapuram to Whitefield | 4.5 | 0.0018 | 19500 | 35 | |
| 10 | Whitefield to Devangonhi | 1.0 | 0.002 | 26000 | 5 | |
| 11 | Baiyyappanahalli to Karmelaram | -Out of Parallelism- | | | | |
| 12 | Karmelaram to Heelalige | -Out of Parallelism- | | | | |