



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. : UP-639 | | |
|--|--|------------|
| Induced Voltage (IV) calculation for PTCC proposal of LILO of 220 kV D/C Unnao-Bithoor Transmission Line at 220 kV Trans Ganga City S/s [Length-4.65 km] - Regd. | | |
| S. No | Reference No. | Dated |
| (i) | UPPTCL: 1328/ETDU/ | 25.11.2023 |
| (ii) | UPPTCL: Letter No GZ 560349 | 25.08.2025 |
| (iii) | BSNL: DE/PTCC/NZ/ BSNL-TD/DV-10585/UP-1244/2025-26 | 19.08.2025 |
| (iv) | Northern Railway: 342-SIG/1/PTCC/2023-24/12/03 | 21.12.2023 |

The PTCC proposal submitted vide reference (i), & (ii) has been examined. The LF induction on Block and Telecom circuits of Northern Railway with respect to details furnished vide above reference (iv) has been computed. The voltage likely to be induced on paralleling Block and Telecom circuits of Northern Railway under Single Line to Ground fault condition are enclosed at Annexure-I. The screening factors as applicable have been considered.

EPR zone for 220 kV proposed S/S is mentioned below:

| Name of the proposed Substation | Half diagonal distance , D/2 (mts) | Fault Current I (KA) | Resistance of Earth Mat, R (ohms) | d (mts) at 430 V | d (mts) at 650 V | d (mts) at 7kV | d (mts) at 10kV |
|---------------------------------|------------------------------------|----------------------|-----------------------------------|------------------|------------------|----------------|-----------------|
| 220 kV Trans Ganga City S/s | 74 | 24 | 0.126 | 446 | 253 | N.A | N.A |

As per the Telecom Details submitted by BSNL vide above reference (iii), there is no copper cable or Armored OFC within 8 km boundary and hence IV computation is not done. Two BTS are present within 8 km boundary and they are not falling within the EPR zone of proposed 220 kV S/s.

Telecommunication details from Defense are still pending and vide above reference (ii), transmission utility has shown urgency for charging of line and has requested for provisional PTCC approval. Taking above into consideration, necessary action for issuance of provisional 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 provisional RAC.

Chief Engineer

To,

| | | | |
|----|---|--|---|
| 1. | Divisional Engineer (PTCC), Northern Zone | BSNL, O/o PGM(North), QA & Inspection Circle D-Tax Building, Eastern Court, Janpath New Delhi-110001 | |
| 2. | GM (S&T) | Northern Railway Baroda House, New Delhi | |
| 3. | Director General of Signals | General Staff Branch, Integrated HQ, MoD (army), Sena Bhawan, DHQ, PO, New Delhi- 110 105 | With a request to provide details of Telecom assets/ NOC at the earliest for issuance of final RAC. |
| 4. | Executive Engineer UPPTCL | ETD - UPPTCL 132 kV S/s Dahi Chowk, Unnao | Copy for information. |

ANNEXURE-I

| CEA Case No.: UP-639 | | | Map Scale : 1 cm= 500 m | | |
|--|-----------------------------|-------------------------------------|----------------------------------|---|----------------------|
| Name of the Power line: LILO of 220 kV D/C Unnao-Bithoor Transmission Line at 220 kV Trans Ganga City S/s | | | Total Length : 4.65 km | | |
| | | | S.R. Value : 20000 Ohm-cm | | |
| S.No. | Telecom. Details | Length of Parallelism in Km. | Mutual Coupling in Ohms. | Effective Fault current in Amps. | I.V in Volts. |
| Northern Railway: 342-SIG/1/PTCC/2023-24/12/03 Dated 21.12.2023 | | | | | |
| <u>Affected Blocks & Telecom Circuits Details</u> | | | | | |
| <u>Kanpur-Lucknow Section</u> | | | | | |
| 1 | Sonik R/s to Unnao R/s | | -Out of Parallelism- | | |
| 2 | Unnao R/s to Magarwara R/s | | -Out of Parallelism- | | |
| 3 | Magarwara R/s to Kanpur R/s | | -Out of Parallelism- | | |