



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**

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<b>CEA Case No. : KNK-1174</b>		
<b>Induced Voltage (IV) calculation in respect of PTCC proposal for 220 kV S/C U.G. cable from 220/66/11 kV HSR Layout SS to 220/33 kV BMRCL RSS-7A (Phase-II), Silk Board (4.990 km)- regd.</b>		
<b>S. No</b>	<b>Reference No.</b>	<b>Dated</b>
(i)	KPTCL: CEE/SLDC/PTCC/F-3804/7557-66	31.01.2025
(ii)	KPTCL: CEE/SLDC/PTCC/F-3804/1486	21.05.2025
(iii)	KPTCL: Email Undertaking	05.07.2025
(iv)	BSNL: SR-PTCC/F-3804/2	06.06.2025
(v)	South Western Railway: SG/SWR/PTCC/Corres/E:2-12	18.03.2025

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

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
220/33kV BMRCL RSS-7A (Phase-II), Silk Board	42.61	20.48	0.184	331	204	NA	NA

As per the details submitted by BSNL, No telephone exchange of BSNL in falling within the EPR zone of proposed substation.

Telecommunication details from ADG Telecommunications, MoD are awaited however, vide reference (iii) above, BMRCL has informed that BMRCL Silk Board RSS is completed in all aspects and the plant is awaiting charging due to want of PTCC approval. BMRCL has shown urgency for issuance of provisional PTCC clearance and has given an undertaking that "In the event that the charging of the said transmission lines leads to any interference with telecom assets or any impact on personnel or installations of Defense authorities, BMRCL shall take all remedial measures and no other utility shall be held liable for this".

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.

LF induction on telecommunication circuits of Defense, will be communicated after the receipt of details from ADG Telecommunications, MoD.

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

Encl.: As above

**Chief Engineer,**

**To,**

1.	Divisional Engineer (PTCC), Southern Zone	BSNL, Inspection Circle, 2 <sup>nd</sup> Floor, Sanchar Complex, WMS Compound, Jayanagar 5 <sup>th</sup> Block, 9 <sup>th</sup> Main, 47 <sup>th</sup> Cross, Bangalore-560041	
2.	PCSTE/SWR	Principal Chief Signal & Telecom Engineer, Rail Soudha, Gadag Road, Hubballi-580020	
3.	Additional Director General (Telecom)	Director General of Signals General Staff Branch, Integrated HQ, MoD (army), Sena Bhawan, DHQ, PO, New Delhi- 110 105	With a request to submit the Telecom Details/ NOC so that final RAC could be processed.
4.	Member(Power), KPTCL	Chief Engineer Electricity, SLDC #28, Race Course Road, Bengaluru-560009	Copy for information

**ANNEXURE-I**

<b>CEA Case No.:</b> KNK-1174		<b>Map Scale</b> : 1 cm= 500 m			
Name of the Power line: 220kV S/C U.G. cable from 220/66/11kV HSR Layout SS to 220/33kV BMRCL RSS-7A (Phase-II), Silk Board		<b>Total Length</b> : 4.990 km			
		<b>S.R. Value</b> : 30000 Ohm-cm			
<b>S.No.</b>	<b>Telecom. Details</b>	<b>Length of Parallelism in Km.</b>	<b>Mutual Coupling in Ohms.</b>	<b>Effective Fault current in Amps.</b>	<b>I.V in Volts.</b>

BSNL Letter No: SR-PTCC/F-3804/2 Dated 06.06.2025

<b>NIFT EXCHANGE (HSR SUB DIV)</b>					
1.	NFT-N1	1.25	0.0022	14904	33
2.	NFT-N2	IV less than 430V			
3.	NFT-N3				
4.	NFT-N4				
<b>HSR EXCHANGE</b>					
1.	HSR-H1	IV less than 430V			
2.	HSR-H2	0.4	0.00133	25195	34
3.	HSR-H3	IV less than 430V			
4.	HSR-H4				
5.	HSR-H5				
<b>KORAMANGALA EXCHANGE</b>					
1.	KOR Exge – P78	0.5	0.0016	8361	13
2.	KOR Exge – P46	IV less than 430V			
3.	KOR Exge – P55				

**ANNEXURE-II**

<b>CEA Case No.:</b> KNK-1174 Name of the Power line: 220kV S/C U.G. cable from 220/66/11kV HSR Layout SS to 220/33kV BMRCL RSS-7A (Phase-II), Silk Board			<b>Map Scale</b> : 1 cm= 500 m <b>Total Length</b> : 4.990 km <b>S.R. Value</b> : 30000 Ohm-cm		
<b>S.No.</b>	<b>Telecom. Details</b>	<b>Length of Parallelism in Km.</b>	<b>Mutual Coupling in Ohms.</b>	<b>Effective Fault current in Amps.</b>	<b>I.V in Volts.</b>

<b>SWR Letter No:</b> SG/SWR/PTCC/Corres/E:2-12 <b>Dated</b> 18.03.2025					
1.	KSR Bengaluru - Nayandahalli	Outside IV consideration zone			
2.	KSR Bengaluru – Bengaluru Cantonment RS	Outside IV consideration zone			
3.	Baiyyappanahalli – Bengaluru East	Out of Parallelism			
4.	Baiyyappanahalli - Karmelaram	1.35	0.000022	14743	0.32
5.	Karmelaram - Heelalige	0.4	0.0000081	25195	0.2