



सत्यमेव जयते

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

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<b>CEA Case No.: JHR-62</b>		
<b>Induced Voltage computation for PTCC proposal of 400 kV D/C PVUNL – Patratu (Katia) Transmission Line [Length- 6.601 km]– Regd.</b>		
<b>Reference:</b>		
<b>S. No.</b>	<b>Reference No.</b>	<b>Dated</b>
(i)	JUSNL Letter No: 32/TL/Patratu	06.02.2023
(ii)	JUSNL Letter No: 06/GC/400KVTL/Patratu	04.01.2024
(iii)	BSNL: DE/PTCC/ER/EJH220220234732/01	19.01.2024
(iv)	East Central Railway : ECR-HQ0SnT(Genl)/13/2022- O/oDy.CSTE/HQ/ECR/198678/2294	24.04.2023
(v)	Defense : B/46937/Sigs 7(b)/3226	24.01.2023

The PTCC proposal submitted vide reference (i) & (ii) has been examined. The LF induction on Block and Telecom circuits of East Central 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 East Central Railway under Single Line to Ground fault condition are enclosed at Annexure-I. The screening factors as applicable have been considered. DET, BSNL EZ and DG Signals, MoD has issued No Objection Certificate (NOC) vide reference (iii) & (v) respectively.

EPR zone for 400 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
400 kV GIS PVUNL S/s	197	44.1	0.08	1419	872	N.A	N.A

As per the Telecom Details submitted by BSNL vide above reference (iii), no telephone exchange of BSNL is falling within the EPR zone of proposed 400 kV Substation.

Taking above into consideration, necessary action regarding issuance of PTCC approval for the subject cited transmission line may be taken under intimation to this office.

Encl.: As above

**Chief Engineer**

To,

1.	Divisional Engineer (PTCC), Eastern Zone	BSNL QA & Inspection Circle, QA Bhawan, EP-GP Block, Sector-V Kolkata	
2.	General Manager (S&T)	O/o GM (S&T) East Central Railway Hajipur	
3.	Senior Manager Patratu, JUSNL	400/220 kV S/s JUSNL Patratu	Copy for information

ANNEXURE-I

CEA Case No.: JHR-62 Name of the Power line: 400 kV D/C PVUNL – Patratu (Katia) Transmission Line.			Map Scale : 1 cm= 500 m Total Length : 6.601 km S.R. Value : 7500 Ω-cm		
S.No.	Telecom. Details	Length of Parallelism in Km.	Mutual Coupling in Ohms.	Effective Fault current in Amps.	I.V in Volts.
East Central Railway Letter No: ECR-HQ0SnT(Genl)/13/2022-O/oDy.CSTE/HQ/ECR/198678/2294 Date: 24.04.2023					
<b><u>Affected Blocks &amp; Telecom Circuits Details</u></b>					
1	Bhurkunda to Patratu	0.25	0.000006	31000	02
2	Patratu to Hendigri	1.55	0.0005	25200	13