



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**  
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<b>CEA Case No. : UP-614</b>		
<b>Induced Voltage (IV) Calculation for PTCC proposal of 220 kV S/C Dahi Chowki Unnao – Ajgain TSS transmission line (Length: 10.145 km)</b>		
<b>S. No</b>	<b>Reference No.</b>	<b>Dated</b>
(i)	314/ETDU	20.03.2023
(ii)	UPPTCL E-mail	05.06.2024
(iii)	BSNL: DET/PTCC/ND/DV-10302/UP-1167/2023-2024	23.02.2024
(iv)	Northern Railway: 342-SIG/1/PTCC/2023-24/04/01	03.04.2023
(v)	Defense: B/46937/Sigs7(b)/3299	02.02.2024

The PTCC proposal submitted vide reference (i) and (ii) has been examined. The LF induction on communication circuits of BSNL and Northern Railway with respect to details furnished vide above references (iii) and (iv) respectively have been computed. The voltage likely to be induced on paralleling communication cables of BSNL and Northern 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. DG Signals, MoD vide reference (v) has issued No Objection Certificate (NOC).

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 kV Ajgain TSS	81.74	40	0.127	884	557	NA	NA

As per the details submitted by BSNL vide reference (iii) above, no telephone exchange is falling in the EPR zone of the proposed substations.

Taking the above into consideration, necessary action for issuance of PTCC route approval may be taken under intimation to this office.

Encl.: As above

**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, Headquarter Office, Baroda House, New Delhi	
3.	Ex. Engineer UPPTCL	400 kV Substation campus, Dahi Chowki, Unnao – 209 801	Copy for information

**ANNEXURE-I**

<b>CEA Case No.: UP-614</b>			<b>Map Scale : 1 cm= 500 m</b>		
<b>Name of the Power line: 220 kV S/C Dahi Chowki Unnao – Ajgain TSS transmission line</b>			<b>Total Length : 10.145 km</b>		
			<b>S.R. Value : 7500 Ohm-cm</b>		
<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>BSNL Letter No.- DET/PTCC/ND/DV-10302/UP-1167/2023-24/ Dated 23.02.2024</b>					
1	Ajgain TE- Railway Crossing Ajgain, Copper, 1km, 1x100P	0.883	0.0159	20724	329

**ANNEXURE-II**

<b>CEA Case No.: UP-614</b>			<b>Map Scale : 1 cm= 500 m</b>		
<b>Name of the Power line: 220 kV S/C Dahi Chowki Unnao – Ajgain TSS transmission line</b>			<b>Total Length : 10.145 km</b>		
			<b>S.R. Value : 7500 Ohm-cm</b>		
<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>Northern Railway: 342-SIG/1/PTCC/2023-24/04/01 Date: 03.04.2023</b>					
1	Unnao R/s to Sonik R/s	2	0.00094	21307	20
2	Sonik R/s to Ajgain R/s	7.4	0.0172	19285	332
3	Ajgain R/s to Jatipur R/s	Out of parallelism			
4	Unnao R/s to Bighapur R/s	Out of parallelism			