



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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CEA Case No. : RAJ-796		
Induced Voltage (IV) calculation for PTCC proposal of 132 kV D/C line from 220/132 kV HZL Switching S/s to 132 kV HZL (Chanderiya) Switchyard [Length- 6.71 km]-Regd.		
S. No	Reference No.	Dated
(i)	Hindustan Zinc Limited: HZL/SPTL/NCTL/2024/40	07.01.2025
(ii)	Hindustan Zinc Limited: e-mail	09.10.2025
(iii)	BSNL: DE/PTCC/NZ/ BSNL-TD/DV-10546/RAJ-1595/2025-26	11.06.2025
(iv)	Western Railway: SG/158/28/11(647)	17.02.2025
(v)	North Western Railway: SG/158/NWR/PTCC/1030	13.02.2025
(vi)	Defense: B/46937/Sigs7(b)/4377 (Received via e-mail dated:07.10.2025)	20.03.2025

The PTCC proposal submitted vide reference (i) & (ii) has been examined. The LF induction on Block and Telecom circuits of Western Railway & North Western Railway with respect to details furnished vide above reference (iv) & (v) has been computed. The voltage likely to be induced on paralleling Block and Telecom circuits of Western Railway & North 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. DET-PTCC, NZ BSNL and DG Signals, MoD has issued No Objection Certificate (NOC) vide reference (iii) & (vi) respectively.

EPR zone for 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
220/132 kV HZL Switching S/s	110	50	0.0844	970	604	N.A	N.A

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 111<sup>th</sup> and 112<sup>th</sup> CLPTCC meeting, necessary instructions for "Deemed Energization approval" shall be specified while issuing RAC.

**Chief Engineer**

**To,**

1.	Divisional Engineer (PTCC), Northern Zone	BSNL, O/o GM (North), QA & Inspection Circle D-Tax Building, Eastern Court, Janpath New Delhi-110001	
2.	GM (S&T) WR	O/o PCSTE, 5 <sup>th</sup> Floor Station Building, Church gate, Mumbai	
3.	GM (S&T) NWR	North Western Railway, Headquarter Office, Room No. 136, First Floor, Near Jawahar Circle, Jaipur - 302017	
4.	Chief Manager-Projects	Hindustan Zinc Limited Udaipur, Rajasthan	Copy for information.

**ANNEXURE-I**

<b>CEA Case No.:</b> RAJ-796			<b>Map Scale</b> : 1 cm= 500 m		
<b>Name of the Power line:</b> 132 kV D/C line from 220/132 kV HZL Switching S/s to 132 kV HZL (Chanderiya) Switchyard			<b>Total Length:</b> 6.71 km		
			<b>S.R. Value</b> : 5000 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>

Western Railway: SG/158/28/11(647)

Dated 17.02.2025

**Affected Blocks & Telecom Circuits Details**

1.	Chittorgarh R/s to Berach R/s	Out of Parallelism			
2.	Berach R/s to Chanderiya R/s	Out of Parallelism			
3.	Chanderiya R/s to Bassi Berisal R/s	4.0	0.0048	19400	93
4.	Chittorgarh R/s to Chanderiya R/s	Out of Parallelism			

**ANNEXURE-II**

<b>CEA Case No.:</b> RAJ-796			<b>Map Scale</b> : 1 cm= 500 m		
<b>Name of the Power line:</b> 132 kV D/C line from 220/132 kV HZL Switching S/s to 132 kV HZL (Chanderiya) Switchyard			<b>Total Length:</b> 6.71 km		
			<b>S.R. Value</b> : 5000 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>
North Western Railway: SG/158/NWR/PTCC/1030			Dated 13.02.2025		
<b><u>Affected Blocks &amp; Telecom Circuits Details</u></b>					
1.	Gangrar R/s to Det R/s	Out of Parallelism			
2.	Det R/s to Chanderia R/s	Out of Parallelism			