



सत्यमेव जयते

भारत सरकार  
Government of India  
विद्युत मंत्रालय  
Ministry of Power  
केन्द्रीय विद्युत प्राधिकरण  
Central Electricity Authority  
पावर कम्युनिकेशन डवलपमेंट प्रभाग  
Power Communication Development Division

No. CEA/PCD/ PTCC/BHR-158/209-11

Date :18.03.2020

**Subject:** Induced voltage calculation in respect of LILO of Kishanganj-Patna 400 kV D/C (Quad Moose) line of PGCIL at Saharsa S/S.

Ref. :	(i)	PGCIL Ref. No. ER-I/PAT/ENGG/PTCC/LILO SAHARSA/58	Dated: 04.05.2019
	(ii)	BSNL Ref. No. DE/PTCC/ER/EJH080520192431/01	Dated: 01.08.2019
	(iii)	East Central Railway, Ref.no. ECR/S&T/PTCC/134,PL.III/466	Dated: 17.06.2019
	(iv)	Defense Ref. No. B/46937/Sigs 7(b)/1679/	Dated: 31.07.2019

The PTCC proposal submitted vide ref. (i) has been examined. The low frequency induction on BSNL cables and block circuits of East Central Railway lines as per details furnished vide ref. (ii) and ref (iii) respectively, has been examined. The Soil Resistivity value has been taken as 7,500 Ohms-cm, as per data submitted by Power Authority. Voltages likely to be induced on paralleling BSNL cables and Railway block circuits under single line to ground fault condition are enclosed at Annex-I and Annex-II respectively. The screening factors as applicable have been considered. Defense has accorded 'No objection Certificate' (NOC) vide above ref. (iv) for this line (a copy enclosed at Annex-III).

Taking above into consideration, kindly take necessary action regarding issue of PTCC route approval.

**Encl.:** As above.

*Upendra Kumar*

(Upendra Kumar)  
Chief Engineer

To,  
DET (PTCC), Eastern Region,  
Inspection & QA Circle, BSNL  
Q.A. Bhawan, EP-GP Block, Sector-V,  
Salt Lake, Kolkata – 700091

**Copy to :**

1. Dy. CSTE/HQ O/o General Manager (S&T), East Central Railway, Hajipur, District- Vaishali, (Annex-II only)
2. Sr. General Manager (Engg), PGCIL, Vidyut Board Colony, Shastri Nagar, Patna-800023.

MIC

Case No.: BHR-158		Map Scale : 1cm=500mts			
Name of the Power line: LILO of Kishanganj — Patna 400kV D/c (Quad Moose) line of PGCIL at Saharsa ( New) TL (LOOP IN)		Total Length : 37.84			
		S.R. Value : 7,500 Ohms-cm			
S.No.	Telecom. Details	Length of Parallelism in Km.	Mutual Coupling in Ohms.	Effective Fault current in Amps.	I.V in Volts.

## BSNL DETAILS

Ref. No: DE / PTCC / ER / EJM080520192431 /01 DT. 01.08.2019

## Affected Blocks &amp; Telcom Circuits Details

1	<b>ROHUA TULSIYAH I EXCHANGE</b>				
i	Rohua Exchange to Tulsiyahi Village (200 pr. U/G cable, dist. 1 km)	}	IV less than	430V	
ii	Rohua Exchange to Rohua Village (100 pr. U/G cable, dist. 800 m)				
iii	Rohua Exchange to Shahpur Village (200 pr. U/G cable, dist. 2 km)				
2	<b>BANGAON EXCHANGE</b>				
i	Bangaon Exchange to Bariyahi Bazar (200 pr. U/G cable, dist. 3.5 km)		IV less than	430V	
ii	Bangaon Exchange to Gadhiya Village (50 pr. U/G cable, dist. 4 km)	04	0.0521	12200	636
iii	Bangaon Exchange to Satarwar Village (100 pr. U/G cable, dist. 4 km)	}	IV less than	430V	
iv	Bangaon Exchange to Chainpur Village (100 pr. U/G cable, dist. 4.5 km)				
3	<b>SAHARSA MAIN EXCHANGE</b>				
i	Saharsa Exchange to Bariyahi bazar (100 pr. U/G cable, dist. 5 km)	}	IV less than	430V	
ii	Saharsa Exchange to Nariyar Village (200 pr. U/G cable, dist. 3 km)				
iii	Saharsa Exchange to Sarahi Village (200 pr. U/G cable, dist. 1.5 km)				
iv	Saharsa Exchange to Naya Bazar (400 pr. U/G cable, dist. 2 km)				
v	Saharsa Exchange to Shivpuri Village (100 pr. U/G cable, dist. 3 km)				
vi	Saharsa Exchange to Purab Bazar (800 pr. U/G cable, dist. 2 km)				
vii	Saharsa Exchange to Mahavir Chowk (400 pr. U/G cable, dist. 1 km)				
viii	Saharsa Exchange to Microwave Saharsa (400 pr. U/G cable, dist. 3 km)				

19/8  
18/3/20

मुख्य अभियंता / Chief Engineer  
केन्द्रीय विद्युत प्राधिकरण / C.E.A.  
विद्युत मंत्रालय / Ministry of Power  
भारत सरकार / Govt. of India  
नई दिल्ली / New Delhi

## ANNEXURE I

<b>Case No.: BHR-158</b> <b>Name of the Power line: LILO of Kishanganj — Patna 400kV D/c</b> <b>(Quad Moose) line of PGCIL at Saharsa ( New) TL (LOOP IN)</b>			<b>Map Scale : 1cm=500mts</b> <b>Total Length : 37.377 Km</b> <b>S.R. Value : 7,500 Ohms-cm</b>		
S.No.	Telecom. Details	Length of Parallelism in Km.	Mutual Coupling in Ohms.	Effective Fault current in Amps.	I.V in Volts.

4	<b>BALUAHAAT EXCHANGE</b>					
i	Baluahaat Exchange to Balhi Teghra Village (100 pr. U/G cable, dist. 3.5 km)	}				
ii	Baluahaat Exchange to Sitanabad Village (100 pr. U/G cable, dist. 4 km)					IV less than 430V
iii	Baluahaat Exchange to Khoju Chowk (50 pr. U/G cable, dist. 3.5 km)					
iv	Baluahaat Exchange to Saroja Village (100 pr. U/G cable, dist. 3.5 km)					
5	<b>SIMRI BAKHTIYARPUR EXCHANGE</b>					
i	Simri Bakhtiyarpur Exchange to Ranginja pillar (450 pr. U/G cable, dist. 3.5 km)	}				
ii	Simri Bakhtiyarpur Exchange to Paharpur Piller (300 pr. U/G cable, dist. 4 km)					
iii	Simri Bakhtiyarpur Exchange to Ranihat Piller (200 pr. U/G cable, dist. 1.5 km)					
iv	Simri Bakhtiyarpur Exchange to Sabji Market Piller (300 pr. U/G, dist. 1.5 km)					
v	Simri Bakhtiyarpur Exchange to Post Office Piller (200 pr. U/G, dist. 1.25 km)					IV less than 430V
vi	Simri Bakhtiyarpur Exchange to Sharma Chowk Piller (100 pr. U/G, dist. 1 km)					
vii	Simri Bakhtiyarpur Exchange to SIB Block Piller (150 pr. U/G, dist. 1 km)					
viii	Simri Bakhtiyarpur Exchange to Fenshaha Piller (150 pr. U/G, dist. 2.5 km)					
ix	Simri Bakhtiyarpur Exchange to Sairi Tola Piller (100 pr. U/G, dist. 1 km)					
x	Simri Bakhtiyarpur Exchange to Purani Bazar Tola (200 pr. U/G, dist. 700 m)					
xi	Simri Bakhtiyarpur Exchange to Balhi Piller (200 pr. U/G, dist. 4 km)					
6	<b>TELIYAHAT EXCHANGE</b>					
i	Teliyahat Exchange to Banma Itehari Piller (200 pr. U/G, 1 km)	IV less than 430V				
7	<b>SONBARSHA RAJ EXCHANGE</b>					
i	Sonbarsha Raj Exchange to Murli Chowk Piller (50 pr. U/G, dist. 2 km)	IV less than 430V				





Tele : 23019745

BHR-158 <sup>ANNEX-11</sup>

Directorate General of Signals  
Signals 7  
General Staff Branch  
Integrated HQ of MoD, (Army)  
DHQ PO, New Delhi - 110011


B/46937/Sigs 7(b)/1679/

31 Jul 2019

Sr. General Manager (Engg)  
Power Grid Corporation of India Limited  
Vidyut Board Colony  
Shastri Nagar, Patna-800023 (Bihar)

**PROPOSAL FOR PTCC APPROVAL FOR CONSTRUCTION OF LOOP IN & LOOP OUT (LILO)  
OF 400KV D/C KISHANGANJ-PATNA TRANSMISSION LINE AT 400/220/132KV SAHARSA  
SUB-STATION (NEW), ASSOCIATED WITH ERSS-XXI UNDER TARIFF BASED COMPETITIVE  
BIDDING (TBCB) PROJECTS**

1. Ref your letter No ER-I/PAT/ENGG/PTCC/LILO SAHARSA/58 dt 04 May 2019.  
(copy att).
2. No Objection Certificate (NOC) is accorded based on inputs provided vide Map sheet received under your letter mentioned above.
3. Documents alongwith map sheets (in original) are returned herewith for your further necessary action.

  
(Anurag Mishra)  
Lt Col  
GSO 1 (Comn)  
for SO-in-C

**Enclosures** : As above

**Copy to :-**

✓ The Director (PTCC), CEA  
Power Communication Development Division  
NRPC Complex, 18-A Shaheed Jeet Singh Marg  
Katwaria Sarai, New Delhi - 110016

for information.