

BEFORE THE HON'BLE UTTAR PRADESH ELECTRICITY REGULATORY COMMISSION

LUCKNOW

IN THE MATTER OF:

Application under Section 14, 15(1), 86(1)(d) of the Electricity Act, 2003 read with Uttar Pradesh Electricity Regulatory Commission (Conduct of Business) Regulation, 2019 and Uttar Pradesh Electricity Regulatory Commission (General Conditions of Transmission License) Regulations, 2005 seeking Transmission License for Jewar Transmission Ltd.

AND IN THE MATTER OF

Tirwa Transmission Ltd.

.....Applicant

AND

REC Power Development and

Consultancy Limited & Ors.

.....Respondents

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Through-

Date: 31-07-2024



Abiha Zaidi,
Advocate on Record,
Partner,
SAAZ Partners,
(Advocates & Solicitors)

FORM- I

Application form for grant of Transmission License

Particulars of the Applicant

1. Name of the Applicant: Tirwa Transmission Ltd.
2. Name of the Company: Tirwa Transmission Ltd.
3. Registered Address: 2nd Floor, Niryat Bhawan, Rao Tularam Marg, Vasant Vihar, Opposite Army Hospital & Referral, New Delhi- 110057, India.
4. Name, Designation & Address of the contact person: Mandalaparthi Raghu Kumar- Director (Authorized Representative) r/o Flat no. 104, JMR Spring Avenue, MJ Colony Street No. 1, Le Moulali, Secunderabad, Hyderabad, Telangara- 500040.
5. Contact Tel. Nos.: 9676520044
6. Fax No.: NA
7. E- Mail ID: info@ttl.in.net
8. Place of Incorporation/ Registration: Urjanidhi, First Floor, 1, Barakhamba Lane, Cannaught Place, New Delhi, Central Delhi- 110001, Delhi.
9. Date of Incorporation/ Registration: 2023.06.14
10. Geographical Area within which Applicant proposes to undertake transmission of electricity: Construction of 220/132/33 kV (Kannauj) substation with associated lines and LILO of on circuit of 400 kV D/C (Twin Moose) Shamli-Aligarh line at THDC 2x660 MW Khurja Power Plant (Transmission System).
11. Following documents are to be enclosed:
 - a) Certificate of registration/incorporation: Annexure A-3.
 - b) Certificate for commencement of business:
 - c) Memorandum of Association and Articles of Association: Annexure A-4.
 - d) Original power of attorney of the signatory to commit the Applicant or its promoter:
 - e) Details of Income tax Registration: **PAN: AAKCT1999G**
 - f) Draft licence
 - g) All the documents mentioned in the Regulation.

Details of Financial Data of Applicant

12. Net worth (in equivalent Indian Rupees-conversion to be done at the rate of exchange prevailing at the end of each Year) for immediate past 5 (five) financial years. (Specify financial year as applicable).

(DD/MM/YY) To (DD/MM/YY)	In Home Currency	Exchange rate used	In equivalent Indian Rupees
31/03/2024	INR		1.00 LAKH

Copies of Annual Reports or certified audited results to be enclosed in support of above.

Not Applicable Since Company in corporate on 14th June 2023

13. Annual turnover (in equivalent Indian Rupees - conversion to be done at the rate of exchange prevailing at the end of each year) for immediate past 5 (five) financial years. (Specify financial year as applicable). **Not applicable since company in Construction Stage**

(DD/MM/YY) To (DD/MM/YY)	In Home Currency	Exchange rate used	In equivalent Indian Rupees.
	Not Applicable		

Copies of Annual Reports or certified audited results to be enclosed in support of above.

14. Certificate of Credit Rating : **Not Applicable**
15. Certificate of 'Standard' borrower account : **Not Applicable**
16. Certificate stating that RBI has not classified the Applicant as a 'wilful defaulter'. **Not Applicable**
17. List of documents enclosed in support of Sl. Nos. (10) and (11) above:
- Grid Map of the Project: Annexure A-1
 - Incorporation Certificate. Annexure A-3
 - MOA and AOA Annexure A-4
 - Certificate for Commencement of Business
 - Pan Card
18. a. Whether applicant himself shall be financing the proposed transmission of electricity fully on its own balance sheet.
- b. If, yes, proposed equity from the Applicant:
- Amount : 1.00 LAKH
 - Percentage : 100%
19. In case the applicant proposes to tie up with some other Agency for equity, then name & address of such agency: **Not Applicable**
- Name, designation & address of reference person of the other agency:
 - Contact Tel. No.:
 - Fax No.:
 - E-mail ID:

- e. Proposed equity from the other agency:
 - i. Amount:
 - ii. Percentage of total equity:
 - iii. Currency in which the equity is proposed:
- f. Consent letter of the other agency to associate with the Applicant for equity participation to be enclosed.
- g. Nature of proposed tie-up between the Applicant and the other agency.

20. Details of debt proposed for the Transmission activity: **Own arrangement supported by the parent company.**

- a. Details of lenders:
- b. Amount to be sourced from various lenders:
- c. Letters from the lenders in support of the above to be enclosed.

21. Organisational & Managerial Capability of the Applicant:

(The Applicant is required to enclose proof of their Organisational & Managerial Capability, in terms of the Uttar Pradesh Electricity Regulatory Commission (General Conditions of Transmission Licence) Regulations, 2004, in form of proposed organisational structure & curricula vitae of various executives, proposed office and communication facilities, etc.)

22. Approach & Methodology:

(The Applicant is required to describe approach & methodology for setting up its transmission system and conduct of the business of transmission of electricity as proposed by it. This should contain a statement of the Applicant's plan on conduct of the business of transmission of electricity during the first year after the grant of licence and future plans for the said business during the next five years.)

(Signature of the Applicant)



Date:

Place:

By order of the Commission,
SANGEETA VERMA,
Secretary,
U.P. Electricity Regulatory Commission.



TIRWA TRANSMISSION LTD.

4

Registered Office:

2nd Floor, Niryat Bhawan, Rao Tularam Marg, Vasant Vihar, Opposite Army Hospital & Referral, New Delhi – 110 057, India. CIN: U42201DL2023GOI415616

Uttar Pradesh Electricity Regulatory Commission

DRAFT LICENSE

Particulars of the Applicant:

- 1. Details of the Applicant** Tirwa Transmission Ltd., based at 2nd Floor, Niryat Bhawan, Rao Tularam Marg, Vasant Vihar, Opposite Army Hospital Referral, New Delhi- 110057 was incorporated under the Companies Act, 2013 by Bid Process Coordinator as its 100% wholly owned subsidiary.
- 2. Details of the Project** Transmission Service for transmission system “*Construction of 220/132/33 kV Tirwa (Kannauj) substation with associated lines and LILO of one circuit of 400 kV D/C (Twin Moose) Shamli- Aligarh line at THDC 2x660 MW Khurja Power Plant*”.
- 3. Managing Directors/ Directors of the Company**
 - 3.1 Mrs. Sudharani Puritipati
 - 3.2 Mr. Venkatesh Palimpati
 - 3.3 Mr. Mandalaparthi Raghu Kumar
- 4. Type of License** Transmission License
- 5. Location of the Proposed Area** Tirwa (Kannauj), Shamli-Aligarh.
- 6. Description of the Proposed Area**
 - 6.1. Construction of 220/132/33 kV substation, Tirwa (Kannauj). LILO of 220kV Mainpuri (220)- Bhauti PG



(400) S/C line at 220kV Tirwa Substation. LILO of 132 kV Dibiyapur- Bidhuna S/C line at 220 kV Tirwa substation.

- 6.2. Construction of LILO of one circuit of 400 kV D/C (Twin Moose) Shamli- Aligarh Line at THDC 2x660 MW Khurja Power Plant. LILO of one circuit of 400 kV D/C (Twin Moose) Shamli- Aligarh Line at THDC 2x660 MW Khurja Power Plant.


(Signature of Applicant or
The Authorised Person)

Date:

Place:

MINISTRY OF CORPORATE AFFAIRS
RECEIPT
G.A.R.7

Annexure A-15

6

SRN: AA3802886/ BharatKoshOrderId :1-10159943158

Service Request Date:
29/07/2023

SRN Date: 29/07/2023 13:00:36

RECEIVED FROM:

Name: NARESH KUMAR SINHA

Address: 121 VINAYAK APARTMENTS, C 58/19 SECTOR 62, Noida, Noida, Uttar Pradesh, 201309

ENTITY ON WHOSE BEHALF MONEY IS PAID

LLPIN/CIN/DIN: U42201DL2023GOI415616

Name: TIRWA TRANSMISSION LIMITED

Address: Urjanidhi, First Floor, 1, Barakhamba Lane, New Delhi, Central Delhi, Delhi, 110001

FULL PARTICULARS OF REMITTANCE

Service Type: eFiling

Service Description	Type of Fee	Amount (Rs.)
Fee for INC-20A	Normal	300
	Additional	0
Total		300

Mode of Payment: Online

Received Payment Rupees: Three Hundred Rupees Only.

Note: The defects or incompleteness in any respect in this application as noticed shall be placed on the Ministry's website(www.mca.gov.in). In case the application is marked as RSUB, please resubmit the application within the due date. Please track the status of your transaction at all times till it is finally disposed off. (please refer Rule 10 of the Companies (Registration offices and Fees) Rules, 2014)

Declaration for commencement of business

[Pursuant to Section 10A(1)(a) of the Companies Act, 2013
and Rule 23A of the Companies (Incorporation) Rules, 2014]



Refer instruction kit for filling the form

All fields marked in * are mandatory

Company

1*Corporate Identity Number (CIN)

U42201DL2023GOI415616

2 (a) *Name of the Company

TIRWA TRANSMISSION LIMITED

(b) *Registered office address

Urjanidhi, First Floor, 1, Barakhamba
Lane, Connaught Place, New Delhi, Central
Delhi, Delhi, India, 110001.

(c) *email id

cspfccl@pfcindia.com

(d) *Longitude

77.2257

(e) *Latitude

28.6311

3 *Whether the company's activities is/are regulated by a Sectoral Regulator like RBI,
SEBI, IRDAI etc

☐ Yes

☒ No

(a) If Yes, specify Name of the regulator (IRDA/RBI/SEBI/MCA/Others)

(b) If Others, please specify

(c) Letter number/registration number/approval issued under section 406

(d) Date of approval/registration of regulatory body as the case may be

4 Details of subscriber payment for value of shares

(a) *Number of Shareholders for which company wish to report

7

S.no	Name of shareholder	Name of the bank with IFSC code in which amount of subscription money is received for shares subscribed during incorporation	Account number	Date of receipt	Amount of receipt
(a)	(b)	(c)	(d)	(e)	(f)
1	Sachin Shukla	ICICI BANK-ICIC0001352	135205001301	28/07/2023	1000

Certificate by Practicing Professional

I declare that I have been duly engaged for the purpose of certification of this form. It is hereby certified that I have gone through the provisions of the Companies Act, 2013 and Rules thereunder relevant to this form and I have verified the above particulars (including attachment(s)) from the original records maintained by the Company/applicant which is subject matter of this form and found them to be true, correct and complete and no information material to this form has been suppressed

- ☐ Chartered accountant (in whole-time practice) or
- ☐ Cost accountant (in whole-time practice) or
- ☒ Company secretary (in whole-time practice)

*Whether associate or fellow:

- ☐ Associate ☒ Fellow

***To be digitally signed by**

NARFESH
KUMAR
SINHA

*Membership number

*Certificate of practice number

14984

Note: : Attention is drawn to provisions of Section 448 and 449 of the Companies Act, 2013 which provide for punishment for false statement/ certificate and punishment for false evidence respectively.

This eForm has been taken on file maintained by the register of companies through electronic mode and on the basis of statement of correctness given by the Director and professional.

For Office use only

eForm Service request number (SRN)

AA3802886

eForm filing date (DD/MM/YYYY)

29/07/2023

2	Sanjay Kumar Nayak	ICICI BANK-ICIC0001352	135205001301	28/07/2023	1000
3	PFC Consulting Limite	ICICI BANK-ICIC0001352	135205001301	28/07/2023	94000
4	Dharuman Manavalan	ICICI BANK-ICIC0001352	135205001301	28/07/2023	1000
5	Manoj Kumar Rana	ICICI BANK-ICIC0001352	135205001301	28/07/2023	1000
6	Milind M Dafade	ICICI BANK-ICIC0001352	135205001301	28/07/2023	1000
7	Neeraj Singh	ICICI BANK-ICIC0001352	135205001301	28/07/2023	1000

Attachments

(a) *Photograph of Registered Office showing external building and inside office also showing therein at least one Director/ KMP

Tirwa-Merged_document-min.jpg

(b) Certificate of Registration issued by the RBI (Only in case of Non-Banking Financial Companies) /from other regulator

MAX 2MB

(c) Notification declaration as a Nidhi Company

MAX 2MB

(d) Optional attachment(s) - if any

Bank Statement_Tirwa.pdf
CTc_Commencement of Business.pdf

Declaration

I am authorised by the Board of Directors of the Company vide resolution no * 11 dated*

03/07/2023 to sign this form and declare that all the requirements of the Companies Act 2013 and the rules made thereunder in respect of the subject matter of this form and matters incidental there to have been complied with.

I further declare that:

1 Whatever is stated in this form and in the attachments thereto is true, correct and complete and no information material to the subject matter of this form has been suppressed or concealed and is as per the original records maintained by the company

2 All the required attachments have been completely and legibly attached to this form.

3 Every subscriber to the MOA has paid the value for shares agreed to be taken by him.

4 The company has filed with the registrar a verification of its registered office as provided in subsection (2) of section 12.

*To be digitally signed by

*Director

Neeraj Singh
Digitally signed by
Neeraj Singh
Date: 2023.07.28
11:14:18 +05'30'

*Director identification number of the director

08613892

आयकर विभाग
INCOME TAX DEPARTMENT



भारत सरकार
GOVT. OF INDIA

ई-स्थायी लेखा संख्या कार्ड
e - Permanent Account Number (e-PAN) Card
AAKCT1999G

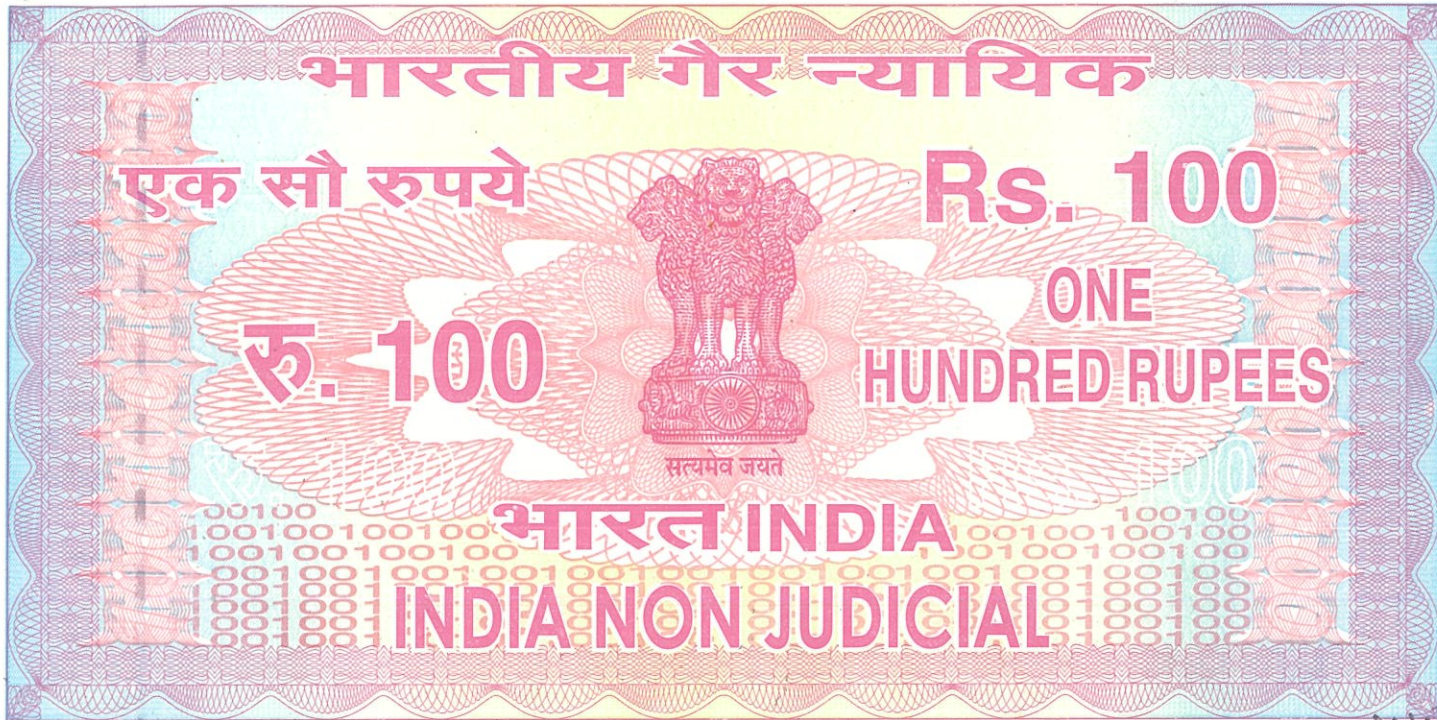
नाम / Name	TIRWA TRANSMISSION LIMITED
निगमन/गठन की तारीख Date of Incorporation / Formation	14/06/2023
	

- ✓ Permanent Account Number (PAN) facilitate Income Tax Department linking of various documents, including payment of taxes, assessment, tax demand tax arrears, matching of information and easy maintenance & retrieval of electronic information etc. relating to a taxpayer. स्थायी लेखा संख्या (पैन) एक करदाता से संबंधित विभिन्न दस्तावेजों को जोड़ने में आयकर विभाग को सहायक होता है, जिसमें करों के भुगतान, आकलन, कर मांग, टैक्स बकाया, सूचना के मिलान और इलक्ट्रॉनिक जानकारी का आसान रखरखाव व बहाली आदि भी शामिल है।
- ✓ Quoting of PAN is now mandatory for several transactions specified under Income Tax Act, 1961 (Refer Rule 114B of Income Tax Rules, 1962) आयकर अधिनियम, 1961 के तहत निर्दिष्ट कई लेनदेन के लिए स्थायी लेखा संख्या (पैन) का उल्लेख अब अनिवार्य है (आयकर नियम, 1962 के नियम 114B, का संदर्भ लें)
- ✓ Possessing or using more than one PAN is against the law & may attract penalty of upto Rs. 10,000. एक से अधिक स्थायी लेखा संख्या (पैन) का रखना या उपयोग करना, कानून के विरुद्ध है और इसके लिए 10,000 रुपये तक का दंड लगाया जा सकता है।
- ✓ The PAN Card enclosed contains Enhanced QR Code which is readable by a specific Android Mobile App. Keyword to search this specific Mobile App on Google Play Store is "Enhanced QR Code Reader for PAN Card". संलग्न पैन कार्ड में एनहांस क्यूआर कोड शामिल है जो एक विशिष्ट एंड्रॉइड मोबाइल ऐप द्वारा पठनीय है। Google Play Store पर इस विशिष्ट मोबाइल ऐप को खोजने के लिए कीवर्ड "Enhanced QR Code Reader for PAN Card" है।

Cut

आयकर विभाग INCOME TAX DEPARTMENT भारत सरकार GOVT. OF INDIA स्थायी लेखा संख्या कार्ड Permanent Account Number Card AAKCT1999G नाम / Name TIRWA TRANSMISSION LIMITED निगमन / गठन की तारीख Date of Incorporation/Formation 14/06/2023 	इस कार्ड के खोने/पाने पर कृपया सूचित करें/लौटाएं: आयकर पैन सेवा इकाई, प्रोटीयन ईगव टेक्नोलॉजीज़ लिमिटेड (पूर्व में एनएसडीएल ई-गवर्नेंस इन्फ्रास्ट्रक्चर लिमिटेड) चौथी मंजिल, सफ़ायर चैंबर, बानेर रोड, बानेर, पुणे - ४११०४५ If this card is lost / someone's lost card is found, please inform / return to : Income Tax PAN Services Unit, Protean eGov Technologies Limited (formerly NSDL e-Governance Infrastructure Limited) 4th Floor, Sapphire Chambers, Baner Road, Baner, Pune - 411045 Tel: 91-20-2721 8080, e-mail: tininfo@proteantechnology.com
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Electronically issued and Digitally signed ePAN is a valid mode of issue of Permanent Account Number (PAN) post amendments in clause (c) in the Explanation occurring after sub-section (8) of Section 139A of Income Tax Act, 1961 and sub-rule (6) of Rule 114 of the Income Tax Rules, 1962. For more details, [click here](#)



తెలంగాణ తెలంగాణ TELANGANA

Tran Id: 240229110102952651
Date: 29 FEB 2024, 11:04 AM
Purchased By:
SAI RAM
S/o SRINIVAS
R/o HYDERABAD
For Whom
MEGHA ENGINEERING & INFRASTRUCTURES LTD.

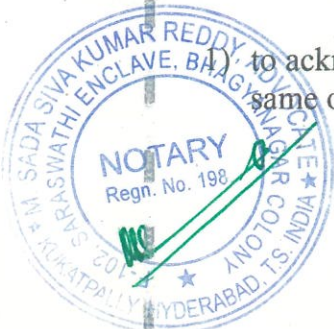
BE 541141

DADI VENKATA SAI
NARASIMHA RAO
LICENSED STAMP VENDOR
Lic. No. 16-11-031/2018
Ren.No. 16-11-001/2024
283/3rt.Raviteja Apts
Bapunagar,S.R Nagar Hyd-500038
Ph 9000701016

POWER OF ATTORNEY

Know all men by these presents, we, Megha Engineering & Infrastructures Limited, a company incorporated under the provisions of Companies Act, 1956 and having its registered office at S-2, Technocrats Industrial Estate, Balanagar, Hyderabad do hereby constitute, appoint and authorize **Mr. M Raghu Kumar** S/o. M Venkata Chalam, Age: 52 years, R/o.Flat No. 104, J M R spring avenue, M J colony street no. 2, near xacier school, malkajgiri, Secunderabad, Hyderabad, LE Moulali-500040 (Aadhaar No. 3155 7589 4584), who is presently employed with us and holding the position of Associate Vice President as our attorney, to do in our name and on our behalf, all below mentioned acts, deeds and things in connection with or incidental to our submitted Bid for selection of Bidder as Transmission Service Provider to establish Inter-State Transmission System for “**Construction of 220/132/33kV Tirwa (Kannauj) Substation with associated lines and LILO of one circuit of 400kV D/C (Twin Moose) Shamli-Aligarh line at THDC 2x660MW Khurja Power Plant**”

to acknowledge the receipt of Letter of Intent / LoI and unconditionally accept the same on behalf of the Company.



[Handwritten signature]

:: 2 ::

- 2) to submit the contract performance bank guarantee in favour of the long term transmission customers;
- 3) to complete process of SPV acquisition (including payment of acquisition price), to sign all documents for transfer of 100% equity shareholding of Tirwa Transmission Limited ('SPV') from PFC Consulting Limited (along with related assets and liabilities) to Company as required under RFP; to purchase stamps or to pay stamp duty and registration fee as per procedure/law required for shares transfer.
- 4) to sign and execute Share Purchase Agreement with PFC Consulting Limited on behalf of company; and to sign all connected and incidental documents to compete all formalities;
- 5) to take all required steps and actions to implement the conditions mentioned in Share Purchase Agreement, to sign required documents, applications, affidavits, undertakings, letters; and to appear, represent and submit all necessary documents before concerned authorities (such as ROC, local and municipal authorities) in relation thereto;
- 6) to appoint consultant / advocate and/or practicing company secretary for assistance in dealing with taking over process of SPV; and to remove him/them; and
- 7) to generally deal with BPC in all matters in connection with our Bid, fulfilling all the requirements mentioned in LOI, RFP, SPA; and to deal with all concerned government authorities and related parties.

We hereby agree to ratify all acts, deeds and things lawfully done by our said attorney pursuant to this Power of Attorney and that all acts, deeds and things done by our aforesaid attorney shall and shall always be deemed to have been done by us.

for Megha Engineering & Infrastructures Ltd.,

Date of execution: 01-03-2024.

Accepted

(Signature of the Attorney)

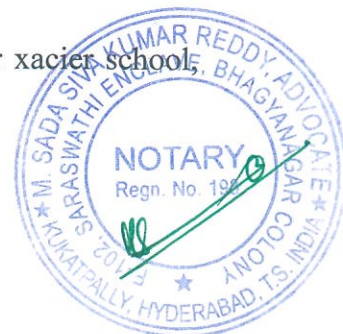
Name: M Raghu Kumar.

Designation: Associate Vice President

Address: Flat No. 104, J M R spring avenue, M J colony street no. 2, near xacier school, malkajgiri, Secunderabad, Hyderabad, LE Moulali-500040



[Signature]
Name: Thirupathi Rao Nadipineni,
Designation: Director.
01.03.2024



:: 3 ::

Specimen signatures of the Attorney attested by Executant

.....

 (Signature of Executant)
 (Thirupathi Rao Nadipineni)



The above power of attorney is executed pursuant to Board Resolution Dated 29.02.2024 and common seal is affixed herewith in terms thereof before the following Witnesses:

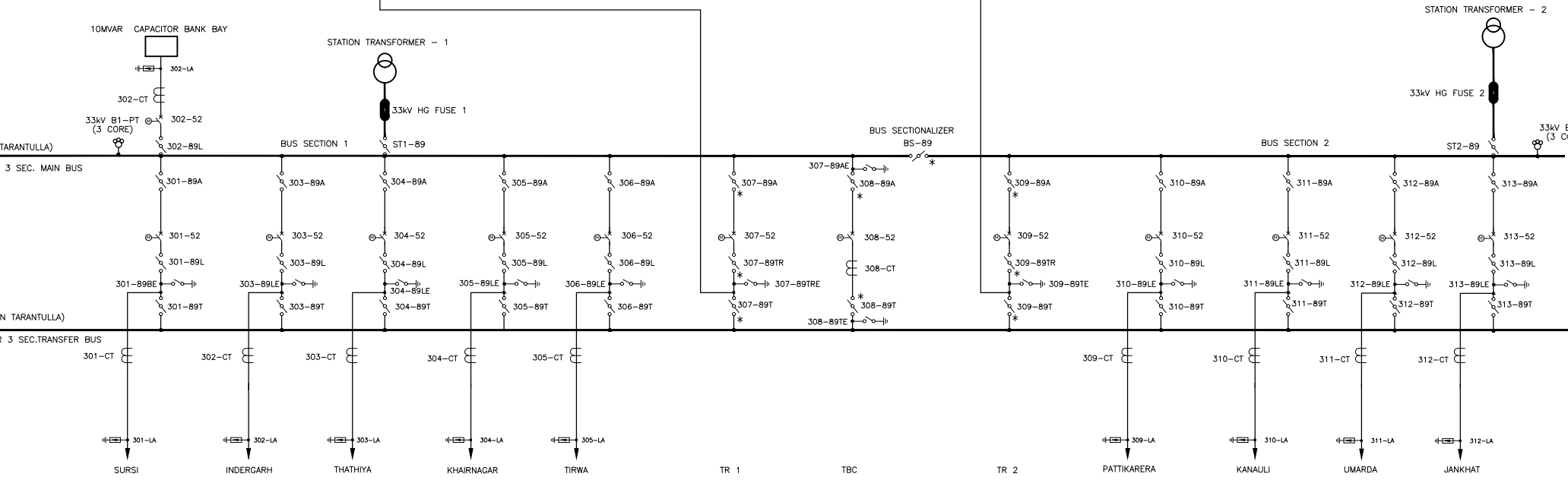
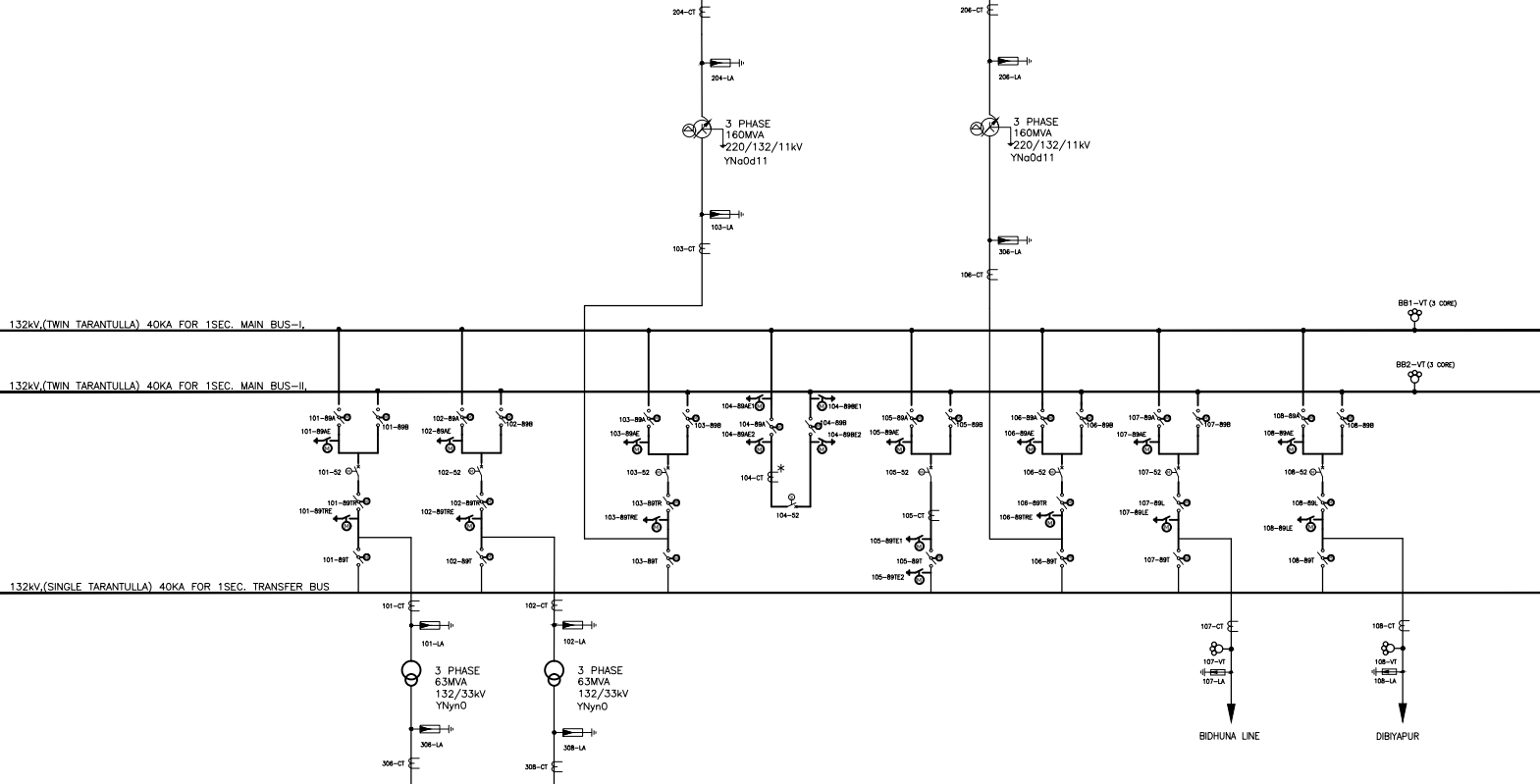
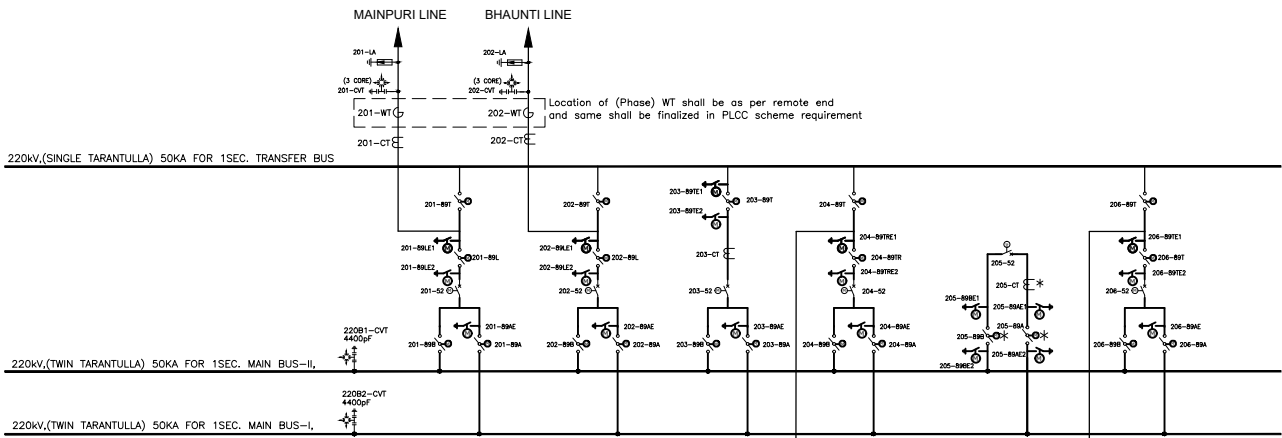
1. 
 N. Thirupathi Rao
 Whole-time Director
2. 
 N. Chandra Kala
 Company Secretary



ATTESTED


 M. SADA SIVA KUMAR REDDY, B.Com., B.L.,
 ADVOCATE & NOTARY
 Appointed by Govt. of A.P., India
 G.O.Ms.No.198, Rev (Regn-II), dt. 11.04.2000
 102, Saraswathi Enclave, Bhagyanagar Colony,
 Kukatpally, Hyderabad, A.P., India (Ph: 98480 44395)

Annexure A-18



BILL OF QUANTITY OF 220KV EQUIPMENTS (TABLE-1)						
SL. No.	SYMBOL	DESCRIPTION	QTY	UNIT		
1		220kV, 3150A, 40kA, 3sec, SF6, 3P CIRCUIT BREAKER WITHOUT CLOSING RESISTOR & WITHOUT CONTROLLED SWITCHING	06	SET		
2		220kV, 1600A, 40kA, 3sec, 3-PHASE HDB (ELECTRICALLY GANGED) ISOLATOR WITHOUT EARTH SWITCH (TANDEM ISOLATORS)	09	SET		
3		220kV, 1600A, 40kA, 3sec, 3-PHASE HDB (MECHANICALLY GANGED) ISOLATOR WITH ONE EARTH SWITCH	05	SET		
4		220kV, 1600A, 40kA, 3sec, 3-PHASE HDB (MECHANICALLY GANGED) ISOLATOR WITH TWO EARTH SWITCH	05	SET		
5		220kV, 3150A, 40kA, 3sec, 3-PHASE HDB (MECHANICALLY GANGED) ISOLATOR WITH TWO EARTH SWITCH	02	SET		
6		198 kV, 10kA, METAL OXIDE GAPLESS LIGHTNING ARRESTER (CLASS-3)	12	NOS		
7		220KV, 5 CORE, 1PH. CT 120% EXTENDED CURRENT RATING (1600-800-500-300/1-1-1-1-1A)	15	NOS		
8		220KV, 5 CORE, 1PH. CT 120% EXTENDED CURRENT RATING (3200-2400-1600/1-1-1-1-1A)	3	NOS		
9		220kV, 1 PH. BUS CVT 4400pF WITH 3CORE,	06	NOS		
10		220kV, 1 PH. LINE CVT '4400 PF WITH 3 CORES, (1 PHASE)	06	NOS		
11		220kV, 0.5mH ,1600 A , WAVE TRAP (HOLD)	04	NOS		

BILL OF QUANTITY OF 132KV EQUIPMENTS (TABLE-2)				
SL. No.	SYMBOL	DESCRIPTION	QTY	UNIT
1		132kV, 3150A, 40kA, 3sec, SF6, 3P CIRCUIT BREAKER WITHOUT CLOSING RESISTOR & WITHOUT CONTROLLED SWITCHING	08	SET
2A		132kV, 2400A, 40kA, 3sec, 3-PHASE HDB ISOLATOR WITHOUT EARTH SWITCH	03	SET
2B		132kV, 1600A, 40kA, 3sec, 3-PHASE HDB TANDEM ISOLATOR WITHOUT EARTH SWITCH	13	SET
2C		132kV, 1600A, 40kA, 3sec, 3-PHASE HDB ISOLATOR WITH ONE EARTH SWITCH	13	SET
3		120kV, 10kA, METAL OXIDE GAPLESS LIGHTNING ARRESTER (CLASS-3)	18	NOS
4		132kV, 3 CORE, 1PH. CT 120% EXTENDED CURRENT RATING (1200 -600 -300/1-1-1A)	21	NOS
4		132kV, 3 CORE, 1PH. CT 120% EXTENDED CURRENT RATING (2400-1200-600/1-1-1A)	03	NOS
5		132kV, 1 PH. VT WITH 3 CORE	12	NOS

BILL OF QUANTITY OF 33 kV EQUIPMENTS (TABLE-3)					
SL. No.	SYMBOL	DESCRIPTION	QTY	UNIT	
1		33 kV ,1600A,31.5 KA ,3 SEC VCB	13	SET	
2A		33 kV, 1250A,31.5KA 3SEC HDB TYPE ISO WITH 1 E/S	4	SET	
2B		33 kV, 800A,31.5KA 3SEC HDB TYPE ISO WITH 1 E/S	9	SET	
2C		33 kV, 1250A,31.5KA 3SEC HDB TYPE ISO WITHOUT E/S	3	SET	
2D		33 kV, 800A,31.5KA 3SEC HDB TYPE ISO WITHOUT E/S	12	SET	
2E		33 kV, 1250A,31.5KA 3SEC HDB TYPE ISO (TANDEM)	2	SET	
2F		33 kV, 800A,31.5KA 3SEC HDB TYPE ISO (TANDEM)	9	SET	
3		33 kV CT (1200-800-400/1A)TR&TBC 3CORE (400-200 /1A) - LINES 2CORE	09 27	NOS	
4		33 kV PT	06	NOS	
5		250KVA ,33/0.433kV,Dyn1 AUX. TRAFO	02	NOS	
6		30kV, 10KA METAL OXIDE GAPLESS LIGHTNING ARRESTER	36	NOS	
7		33 kV HG FUSE	02	SET	
8		33 kV 10 MVAR CAPACITOR BANK (PROVISION)	01	SET	

SYSTEM PARAMETERS:- (TABLE-4)					
Sl.No.	DESCRIPTION OF PARAMETER	UNIT	220KV SYSTEM	132KV SYSTEM	33KV SYSTEM
1	SYSTEM OPERATING VOLTAGE	kV	220kV	132	33
2	MAX. OPERATING VOLTAGE OF THE SYSTEM (rms)	kV	245kV	145	36
3	LIGHTING IMPULSE WITHSTAND VOLTAGE	kVp	1050	650	250
4	SWITCHING IMPULSE WITHSTAND VOLTAGE	kVp	—	—	—
5	POWER FREQUENCY WITHSTAND VOLTAGE FOR 1MIN (RMS)	kV	460	275	95
6	EXTERNAL CREEPAGE	mm	25mm/kV	25mm/kV	25mm/kV
7	SHORT CIRCUIT CURRENT (for 3sec).	kA	40	40	31.5
8	FREQUENCY	Hz	50	50Hz	50Hz
9	CORONA EXTINCTION VOLTAGE	kV	156	105	—
10	DESIGN MAXIMUM AMBIENT TEMPERATURE	°C	50°C	50°C	50°C
11	MINIMUM CLEARANCES				
	PHASE TO PHASE	mm	2100	1300	320
	PHASE TO EARTH	mm	2100	1300	320
	SECTIONAL CLEARANCES	mm	5000	4000	3000

* 31mm/kV FOR LONG ROD COMPOSITE INSULATORS

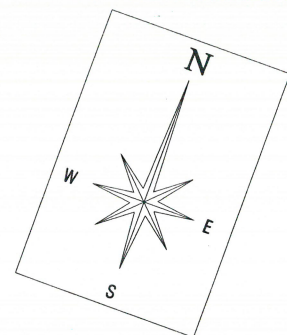
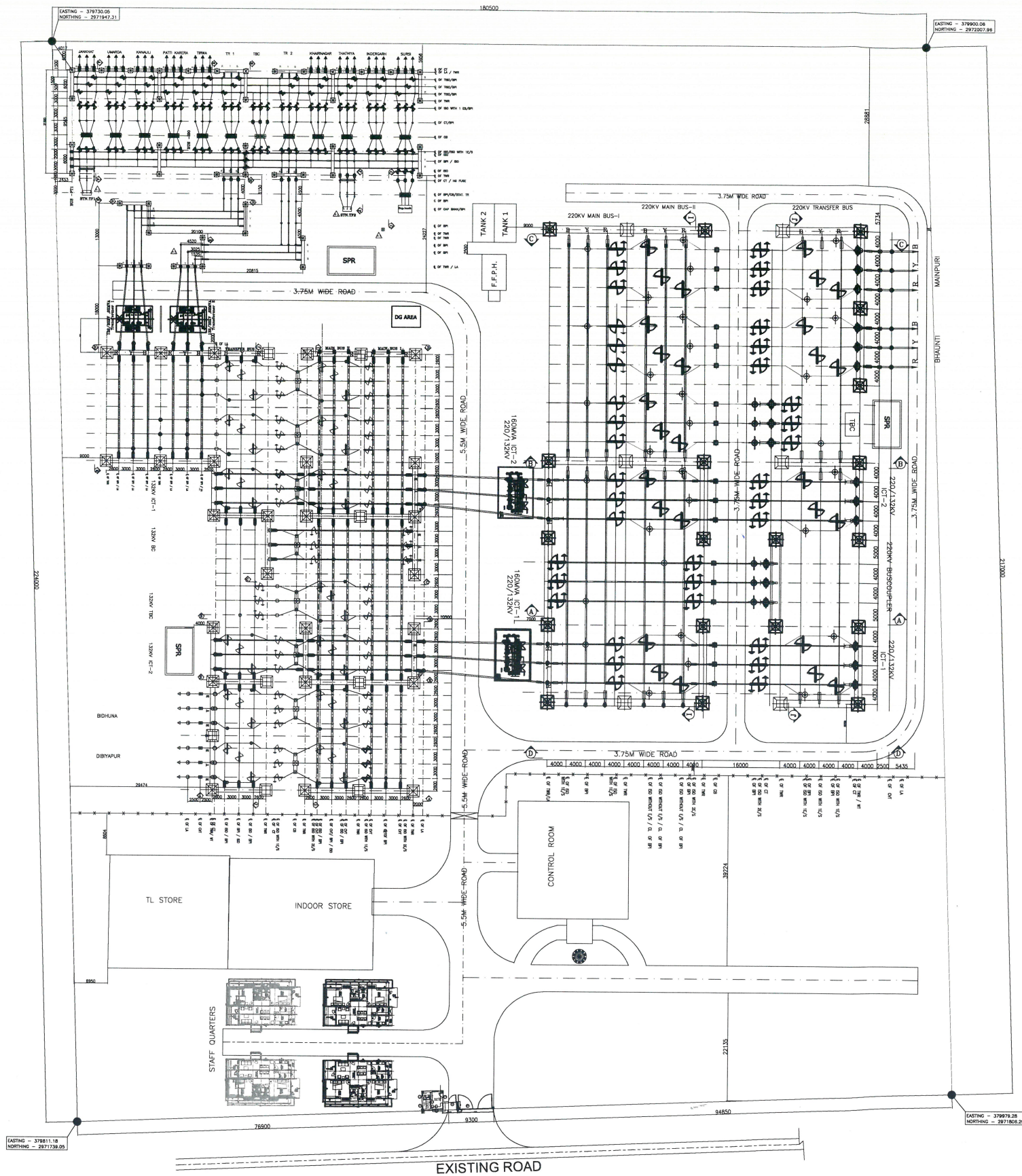
FREE SUPPLY EQUIPMENTS (TABLE-5)		
Sl.No.	SYMBOL	DESCRIPTION
01		AUTO TRANSFORMER, 160 MVA (THREE PHASE), 220 /132/11 kV.
02		POWER TRANSFORMER, 63 MVA (THREE PHASE), 132/33 kV.

EQUIPMENT DESIGNATION FOR SLD				
2/1/3/1/52/89	A/B/L/T	E		
				EARTH SWITCH
				A-EQUIPMENT CONNECTED TO BUS SIDE BREAKER
				A-EQUIPMENT CONNECTED TO BUS-1 (FOR DMT. SCHEME)
				B-EQUIPMENT CONNECTED TO BUS-2 (FOR DMT. SCHEME)
				L-EQUIPMENT CONNECTED TO LINE SIDE
				EQUIPMENT IDENTIFICATION (ISOLATOR)
				EQUIPMENT IDENTIFICATION (CIRCUIT BREAKER)
				VOLTAGE LEVEL - 220/132/33kV

REV. NO.	DESCRIPTION	DATE	DRAWN	ELS.	CIVIL	MBCH.	APPROVED	STATUS
R1	UPDATED AS PER COMMENTS	09.03.24	RFAN				PSNR	FOR APPROVAL
R0	FIRST ISSUE	07.02.24	RFAN				PSNR	FOR APPROVAL

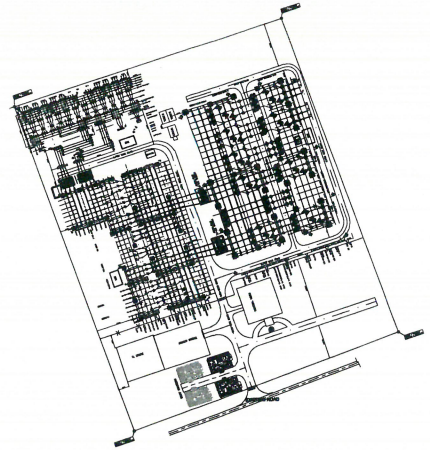
OWNER/CUSTOMER:		TIRWA TRANSMISSION LIMITED				
CONTRACTOR:		MEGHA ENGINEERING & INFRASTRUCTURES LTD				
SUBSTATION:		220/132/33 kV SUB-STATION AT TIRWA (KANNAUJ)				
TITLE:		SINGLE LINE DIAGRAM				
DRAWING SIZE	A1	DRAWING No.		TOTAL SH.	SH.No.	REV.
		SS-E-TRW-000-SYS-031		001	01	01

132KV TERMINAL TOWER



220KV TERMINAL TOWER

KEYPLAN



SYSTEM PARAMETERS:- (TABLE-4)

Sl. No.	DESCRIPTION OF PARAMETER	UNIT	220KV SYSTEM	132KV SYSTEM	33KV SYSTEM
1	SYSTEM OPERATING VOLTAGE	kV	220KV	132	33
2	MAX. OPERATING VOLTAGE OF THE SYSTEM (rms)	kV	245KV	145	36
3	LIGHTING IMPULSE WITHSTAND VOLTAGE	kVp	1050	650	250
4	SWITCHING IMPULSE WITHSTAND VOLTAGE	kVp	—	—	—
5	POWER FREQUENCY WITHSTAND VOLTAGE FOR 1MN (RMS)	kV	460	275	95
6	EXTERNAL CREEPAGE	mm	25mm/kV	25mm/kV	25mm/kV
7	SHORT CIRCUIT CURRENT (FOR 3 SEC.)	kA	40	40	31.5
8	FREQUENCY	Hz	50	50Hz	50Hz
9	CORONA EXTINCTION VOLTAGE	kV	156	105	—
10	DESIGN MAXIMUM AMBIENT TEMPERATURE	°C	50°C	50°C	50°C
11	MINIMUM CLEARANCES				
	PHASE TO PHASE	mm	2100	1300	320
	PHASE TO EARTH	mm	2100	1300	320
	SECTIONAL CLEARANCES	mm	5000	4000	3000

* 31mm/kV FOR LONG ROD COMPOSITE INSULATORS

FREE SUPPLY EQUIPMENTS (TABLE-5)

Sl. No.	SYMBOL	DESCRIPTION	QUANTITY
01		TRANSFORMER, 160 MVA (THREE PHASE), 220 /132/11 kV.	2 NOS
02		TRANSFORMER, 63 MVA (THREE PHASE), 132/33 kV.	2 NOS

BILL OF QUANTITY OF 33 kV EQUIPMENTS (TABLE-3)

SL. No.	SYMBOL	DESCRIPTION	QTY	UNIT
1		33 kV, 1600A, 31.5 KA, 3 SEC VCB	13	SET
2A		33 kV, 1250A, 31.5KA, 3SEC HDB TYPE ISO WITH 1 E/S	4	SET
2B		33 kV, 800A, 31.5KA, 3SEC HDB TYPE ISO WITH 1 E/S	9	SET
2C		33 kV, 1250A, 31.5KA, 3SEC HDB TYPE ISO WITHOUT E/S	3	SET
2D		33 kV, 800A, 31.5KA, 3SEC HDB TYPE ISO WITHOUT E/S	12	SET
2E		33 kV, 1250A, 31.5KA, 3SEC HDB TYPE ISO (TANDEM)	2	SET
2F		33 kV, 800A, 31.5KA, 3SEC HDB TYPE ISO (TANDEM)	9	SET
3		33 kV CT (1200-800-400/1A) TR&TBC 3CORE (400-200 /1A) LINES 2 CORE	09 30	NOS
4		33 kV PT	06	NOS
5		250KVA, 33/0.433kV, Dyn1 AUX. TRAFO	02	NOS
6		30kV, 10KA LIGHTNING ARRESTER	36	NOS
7		33 kV BPI	99	NOS
8		33 kV HG FUSE	02	SET
9		33 kV 10 MVAR CAPACITOR BANK (CAP.BAK PROVISION ONLY)	01	SET

BILL OF QUANTITY OF 220KV EQUIPMENTS (TABLE-1)

SL. No.	SYMBOL	DESCRIPTION	QTY	UNIT
1		220KV, 3150A, 40kA, 3sec, SF6, 3P CIRCUIT BREAKER WITHOUT CLOSING RESISTOR & WITHOUT CONTROLLED SWITCHING	06	SET
2		220KV, 1600A, 40kA, 3sec, 3-PHASE HDB (ELECTRICALLY GANGED) ISOLATOR WITHOUT EARTH SWITCH (TANDEM ISOLATORS)	09	SET
3		220KV, 1600A, 40kA, 3sec, 3-PHASE HDB (MECHANICALLY GANGED) ISOLATOR WITH ONE EARTH SWITCH	05	SET
4		220KV, 1600A, 40kA, 3sec, 3-PHASE HDB (MECHANICALLY GANGED) ISOLATOR WITH TWO EARTH SWITCH	05	SET
5		220KV, 3200A, 40kA, 3sec, 3-PHASE HDB (MECHANICALLY GANGED) ISOLATOR WITH TWO EARTH SWITCH	02	SET
6		198 kV, 10kA, GAPLESS LIGHTNING ARRESTER (CLASS-3)	12	NOS
7		220KV, 5 CORE, 1PH. CT 120% EXTENDED CURRENT RATING (1600-800-500-300/1 A)	15	NOS
8		220KV, 5 CORE, 1PH. CT 120% EXTENDED CURRENT RATING (3200-2400-1600/1 A)	3	NOS
9		220KV, 1 PH. BUS CVT 4400pF WITH 3CORE,	06	NOS
10		220KV, 1 PH. LINE CVT 4400 PF WITH 3 CORES, (1 PHASE)	06	NOS
11		220KV, BPI	36	NOS
12		220KV, WAVE TRAP (KEPT IN HOLD)	4	NOS

BILL OF QUANTITY OF 132KV EQUIPMENTS (TABLE-2)

SL. No.	SYMBOL	DESCRIPTION	QTY	UNIT
1		132KV, 3150A, 40kA, 3sec, SF6, 3P CIRCUIT BREAKER WITHOUT CLOSING RESISTOR & WITHOUT CONTROLLED SWITCHING	08	SET
2A		132KV, 2400A, 40kA, 3sec, 3-PHASE HDB ISOLATOR WITH 2 EARTH SWITCH	03	SET
2B		132KV, 1600A, 40kA, 3sec, 3-PHASE HDB TANDEM ISOLATOR WITHOUT EARTH SWITCH	13	SET
2C		132KV, 1600A, 40kA, 3sec, 3-PHASE HDB ISOLATOR WITH ONE EARTH SWITCH	13	SET
3		120KV, 10kA, GAPLESS LIGHTNING ARRESTER (CLASS-3)	18	NOS
4		132KV, 3 CORE, 1PH. CT 120% EXTENDED CURRENT RATING (1200-600-300/1A)	21	NOS
5		132KV, 3 CORE, 1PH. CT 120% EXTENDED CURRENT RATING (2400-1200-600/1A)	03	NOS
6		132KV, 1 PH. VT WITH 3 CORE	12	NOS
7		132KV BUS POST INSULATOR	45	NOS

NOTE :-

1. TOWER, BEAM, CABLES (POWER/CONTROL/LIGHTING), ERECTION HARDWARE & ASSOCIATED ITEM SHALL BE ADDITIONAL WITH RESPECT TO ORIGINAL TENDER LAYOUT.
2. CRB,FFPH & SPR LOCATIONS ARE TENTATIVE AND SAME SHALL BE AS PER FOUNDATION LAYOUT
3. 220KV, 132KV WT LOCATION AND REQUIREMENT SHALL BE AS PER PLCC SCHEME
4. SCF, CCC, CLEARANCE DIAGRAM, DLSIP, SAG TENSION CALCULATION WILL SUBMITTED SUBSEQUENTLY
5. REQUIREMENT OF E/W WILL FINALIZED DURING DLSIP DESIGN
6. TANDEM ISOLATOR ARRANGEMENT SHALL BE FINALIZED AFTER EQUIPMENT DRAWING APPROVAL
7. ALL DIMENSIONS ARE IN MM

LEGENDS:-

- PRESENT SCOPE
- FENCE

CONDUCTOR & STRINGING DETAILS :- (TABLE-5)

SL.NO.	DESCRIPTION	220 KV		132 KV		33 KV	
		CONDUCTOR DETAIL	CONNECTION HEIGHT (ABOVE PLINTH LEVEL)	CONDUCTOR DETAIL	CONNECTION HEIGHT (ABOVE PLINTH LEVEL)	CONDUCTOR DETAIL	CONNECTION HEIGHT (ABOVE PLINTH LEVEL)
1.	TRANSFORMER 160 MVA 63 MVA	SINGLE MOOSE (ON HV SIDE)	5.9 mtr.	TWIN MOOSE CONDUCTOR (ON LV SIDE)	4.6 mtr.	—	4.0 mtr.
2.	MAIN BUS	TWIN TARANTULLA CONDUCTOR	12.0 mtr.	SINGLE MOOSE CONDUCTOR (ON HV SIDE)	—	TWIN MOOSE CONDUCTOR	5.5 mtr.
3.	TRANSFER BUS	SINGLE TARANTULLA CONDUCTOR	12.0 mtr.	SINGLE MOOSE CONDUCTOR	8.5 mtr.	QUAD TARANTULLA CONDUCTOR	5.5 mtr.
4.	BUS COUPLER	TWIN TARANTULLA CONDUCTOR	17.0 mtr.	SINGLE TARANTULLA CONDUCTOR	12.0 mtr.	—	—
5.	JACKBUS (TFR BAY)	SINGLE MOOSE CONDUCTOR	17.0 mtr.	TWIN MOOSE CONDUCTOR	12.0 mtr.	TWIN MOOSE CONDUCTOR	7.5 mtr.
6.	TRANSFER BUS COUPLER	SINGLE MOOSE CONDUCTOR	—	SINGLE MOOSE CONDUCTOR	—	TWIN TARANTULLA CONDUCTOR	—
7.	FEEDER	SINGLE MOOSE CONDUCTOR	—	SINGLE MOOSE CONDUCTOR	—	SINGLE MOOSE CONDUCTOR	—
8.	CAP BANK / STAT. TRANSF	—	—	—	—	SINGLE MOOSE CONDUCTOR	—
9.	EARTHWIRE WITH PEAK	7/3.6mm GI WIRE(10.98mmDIA)	22.0 mtr.	—	15.5 mtr.	—	9.5 mtr.

THE DETAIL ABOVE ARE SUBJECT TO FINALISATION CONSIDERING CLEARANCE, SAG TENSION, SCF, DLSIP REQUIREMENTS ETC. SUBSEQUENTLY.

TIRWA TRANSMISSION LIMITED

Cat

I Approved

II Approved subject to incorporation of comments.

III Returned for correction / Re-submission as per comments.

IV Accepted for information / reference.

R3	UPDATED SPR LOCATION	Name: R3 Date: 22.05.24	Name: R3 Date: 22.05.24	Name: R3 Date: 22.05.24	FOR APPROVAL
R2	UPDATED AS PER SITE HANDING OVER 18.04.24	Name: R2 Date: 22.05.24	Name: R2 Date: 22.05.24	Name: R2 Date: 22.05.24	FOR APPROVAL
R1	UPDATED AS PER COMMENTS	Name: R1 Date: 12.02.24	Name: R1 Date: 12.02.24	Name: R1 Date: 12.02.24	FOR APPROVAL
R0	FIRST ISSUE	Name: R0 Date: 07.02.24	Name: R0 Date: 07.02.24	Name: R0 Date: 07.02.24	FOR APPROVAL
REV. NO.	DESCRIPTION	DATE	DRAWN	CHECKED	APPROVED

OWNER/CUSTOMER:	TIRWA TRANSMISSION LIMITED
CONTRACTOR:	MEGHA ENGINEERING & INFRASTRUCTURES LTD
SUBSTATION:	220/132/33 kV SUB-STATION AT TIRWA (KANNAU)
TITLE:	LAYOUT PLAN & SECTIONS
DRAWING No.	SS-E-TRW-000-SYS-001
TOTAL SH.	04
SH. No.	01
REV.	03