

SECTION – I
TRIPURA STATE ELECTRICITY CORPORATION LIMITED
NOTICE INVITING TENDER (Domestic Competitive Bidding)

1.0 INTRODUCTION

TSECL invites sealed Bids / Tenders in **2 (two) parts (Part – I: Bid Guarantee & Pre-Qualification Bid & Techno-Commercial Bid, Part – II: Price Bid)** for **“Diversion & re-construction of the part of 132 KV Double Circuit Transmission line (Agartala - Rokhia Section) due to construction of Agartala – Akhaura New Rail Link Project”**.

2.0 SCOPE OF WORK

Scope of work covered under this package includes design, engineering, manufacture, testing, supply, transportation to site, storage, insurance, handling, foundation & erection of super structure & pole structure, hoisting of insulators, stringing of conductor & earth wire, grounding of tower and other related equipments / materials including associated civil works, dismantling of existing tower, conductor, insulator etc. & re-stringing of conductor for construction & completion of the work.

3.0 Scope of work given above is only indicative. The detailed scope has been described in the **technical specification & price bidding schedule** attached with this bidding document.

Bid Receipt time and date : Up to 3.00 p.m. on _____.

Bid opening time and date : 3.30 p.m. on _____.

Cost of bidding document : Rs.5,000.00

Estimated cost put to tender : Rs.3,86,72,496.00

Earnest Money : Rs.7,73,450.00

Completion Period : 180 (One hundred eighty) days

4.0 QUALIFYING REQUIREMENTS FOR BIDDERS: -

4.1 TECHNICAL ELIGIBILITY: -

i) The bidder must have done construction work of 66 KV or above voltage class transmission line on turnkey basis with or without materials in a single award of work in India which must be in satisfactory operation for at least 1 (one) year from the date of publication of NIT, supported by **performance certificate issued by reputed Indian power utilities not below the rank of Executive Engineer / Dy. General Manager / Divisional Engineer or equivalent.**

Or

ii) The bidder who are executing / constructing 66 KV or above voltage class Single Circuit / Double Circuit Transmission Line on turnkey basis with or without materials for different Project Works under TSECL, Tripura.

Authentic Documents in support of the above facts should be accompanied with the Bid. TSECL shall verify the same accordingly.

4.2 FINANCIAL ELIGIBILITY (As per Audited Annual Accounts):

The minimum average annual turnover of the bidder for the last 3 (three) years should not be less than **Rs.1,16,01,749.00**.

- 4.3 Bids shall be submitted by an individual firm or joint venture as one of the following.
- 4.3.1 A single firm shall meet both the requirements of para 4.1 & 4.2 above.
- 4.3.2 A joint venture comprising of 2 (two) firms, shall meet both the requirements of para 4.1 & 4.2 above.
- 4.3.3 The bid document for a Joint Venture unit for a particular work should be supported by the original copy of the Joint Venture Agreement, failing which the bid shall be non responsive.
- 4.3.4 In case of Joint Venture, **the bid document should be submitted by the Prime Bidder and the Prime bidder should independently fulfill the requirement of clause 4.1 above.**
- 4.3.5 The figures of average annual turnovers for each joint Venture partners shall be added together to determine the bidder's compliance with the minimum average annual turnover requirement for the package as given at **para 4.2 above.**
- 4.4 In case of joint ventures any of the partners shall be authorized to incur liabilities and receive instructions for and on behalf of any and all partners of the joint venture and the entire execution of the contract including receipt of payment shall be done exclusively through him. This authorization shall be evidenced by submitting a power of attorney signed by legally authorized signatories of all the partners.
- 4.5 All partners of Joint Venture shall be liable jointly and individually / severally for the execution of the contract in accordance with the contract terms. A copy of the agreement of joint venture partners having such provision duly registered by the Notary shall be submitted with the bid.
- 4.6 In event of failure of the partner the lead partner (prime bidder) shall take over the work and assume full responsibility to complete all the works without any extra cost to TSECL.
- 4.7 Notwithstanding anything contained herein above, TSECL reserves the right to assess the capacity and capability of the bidder to execute the work.
- 5.0 The **tender form** can be seen and downloaded from the TSECL's official website www.tsecl.in and also from Govt. of India website www.tenders.gov.in & Govt. of Tripura website <http://www.tripuratenders.gov.in>. **All the proposals shall be separately sealed with the inscription of proposal (bid) along with tender reference. The offers containing all the proposals shall be sealed in a big envelop with the NIT No. & date of opening scheduled and to be submitted within date specified and shall be opened sequentially in presence of authorized representative of intending bidders.**
- 5.1 Tender will be received only at Transmission Division, Agartala up to 3.00 pm. The pre-qualification & techno-commercial bid shall be opened at 3.30 pm on the same day. In case of any Holiday / Bandh the pre-qualification & techno-commercial bid shall be opened on the next working day at the same time. Only the successful bidders in pre-qualification & techno-commercial bid segment shall be allowed for their price bid. Tender should be accompanied with earnest money to be deposited in the form of **Demand Draft or Banker Cheque** on any nationalized / scheduled Bank in favour of **TRIPURA STATE ELECTRICITY CORPORATION LIMITED** payable at Agartala as per requirement of **clause 3.0** of this section. No tender submitted or received through post after the fixed date and time will be entertained.
- (In case the above scheduled last date for receiving of tender against the N.I.T. is declared holiday by the State Government tender(s) in response to the said N.I.T. will be received up to 3.00 p.m. on the following working day keeping other clauses of N.I.T. unchanged.)
- 5.2 The bidder shall bear all cost and expenses associated with purchase and submission of its bid including post bid discussions, technical & other presentation etc. and TSECL will in no

case be responsible or liable for those cost, regardless of the conduct or outcome of the bidding process.

- 5.3 The bidder shall furnish documentary evidence in support of the qualifying requirements stipulated above along with their bid as per **clause – 4.0 of this section**. Bid received without such documents shall be summarily rejected.
- 5.4 Tender form can be **downloaded from the** TSECL's official website www.tsecl.in and also from Govt. of India website www.tenders.gov.in & Govt. of Tripura website <http://www.tripuratenders.gov.in> and the **cost of the Tender Form shall be as in clause 3.0 of this section which shall be deposited in the form of Demand Draft / Banker Cheque on any Nationalized / Scheduled Bank** in favour of **TRIPURA STATE ELECTRICITY CORPORATION LIMITED** payable at Agartala in a separate sealed envelope along with bid document.
- Non submission / short submission of cost of tender form in case of down loading will be treated as non responsive and shall be rejected outright.**
- 5.5 **The down loaded tender documents in undamaged condition shall be signed by the tenderer / bidder on all pages and will be enclosed with the price bid.** All corrections to rates and items in the tender should be initialed by the tenderer / bidder. Every pages of the rate schedule be signed in full by the tenderer / bidder.
- 5.6 **The bidders must quote their rates in the prescribed price bidding schedule in the downloaded tender document otherwise the bid shall be treated as non-responsive and shall be rejected.** The Bidder shall have to give a **DECLARATION** that he / they have gone through the details of the bidding document as per format appended. **No other price schedule framed by the bidder shall be accepted by TSECL and it shall be rejected.**
- 5.7 Canvassing in connection with tenders / uncalled for remarks by the tenderer will lead to rejection of the tender.
- 5.8 The bidder(s) responsibility for this contract shall commence from the date of issue of order of acceptance of tender and the **period shall be reckoned from 7th (seventh) day** after date of issue of the Letter of Award (LOA).
- 5.9 Before submitting tenders, the tenderers are to satisfy themselves by actual visit to the site of work / supply as regards the prevailing conditions of approaches and roads and availability of labourers and materials etc. and tenderers submitting tender shall be deemed to have done so. No claim on the above will be entertained afterwards and all works and items necessary for completion of the work shall be completed by the bidder / successful contractor irrespectively not mentioned but required by TSECL whatsoever.
- 5.10 The bid shall remain open for **acceptance for a period of 180 (one hundred & eighty) days from the date of opening of tender.** If any tenderer withdraws his tender before the said period or makes any modifications in the terms and conditions of the tender which are not acceptable to the TSECL, the TSECL shall without prejudice to any other right or remedy be at liberty to forfeit the said earnest money absolutely.
- 6.0 **Power of Attorney, if given to authorized signatory for signing the contract Agreement, shall be made in an INDIAN NON-JUDICIAL STAMP PAPER of Rs.100.00 (Rupees one hundred) only.**
- 7.0 The bidding documents are not transferable and cost of bidding document is not refundable under any circumstances

8.0 The bidder shall be required to deposit earnest money as put to tender in the shape of **Demand Draft** or **Banker Cheque** from any nationalized / scheduled Bank guaranteed by Reserve Bank of India favouring **TRIPURA STATE ELECTRICITY CORPORATION LIMITED** payable at **Agartala** along with the bid in a separate sealed envelope. The earnest money deposited is adjustable with contract performance guarantee.

On award of work the successful bidder shall be required to furnish a contract performance guarantee @ 10% of the LOA value in the shape as detailed below:

- a. **50% of Contract Performance Guarantee (CPG) in the shape of Bank Guarantee (BG)** from any nationalized / scheduled Bank guaranteed by Reserve Bank of India favouring **TRIPURA STATE ELECTRICITY CORPORATION LIMITED** payable at **Agartala**.
- b. **Balance 50% amount will be deducted from running bills on pro-rata basis or minimum 10% of the balance amount whichever is higher from each bill till full realization of Contract Performance Guarantee (CPG) & this deduction shall be completed before processing of final bill .**

BID NOT ACCOMPANIED WITH REQUISITE BID EARNEST MONEY IN A SEPARATE SEALED ENVELOPE SHALL NOT BE ENTRAINED AND SHALL BE RETURNED TO THE BIDDER WITHOUT BEING OPENED.

9.0 The bidding documents are not transferable and cost of bidding document is not refundable under any circumstances.

10.0 Address for communication: -

**Dy. General Manager,
Transmission Division,
79 Tilla, Agartala.**

SECTION – II

INSTRUCTION TO BIDDERS

1.0 GENERAL INSTRUCTIONS

The bidders are to satisfy themselves by actual site visit to the site of work as regards the prevailing condition of approaches, transportation facilities, availability of labourers and availability of materials etc. before submission of bid. No claim or excuse on this account will be entertained at any stage later on, whatsoever.

The location of the work is at Nischintapur, which is about 5 KM away from **Agartala**. The nearest railway station is Agartala. The materials may be transported by road transport through National Highway – 44.

2.0 COST OF BIDDING

The Bidder shall bear all the costs and expenses associated with preparation and submission of its Bid including post-bid discussions, technical and other presentation etc. and the TSECL shall in no case be responsible or liable for those costs, regardless of the conduct or outcome of the bidding process.

3.0 THE BIDDING DOCUMENT

3.1 CONTENTS OF BIDDING DOCUMENTS

The goods and services required bidding procedures and contract terms are as prescribed in the Bidding Documents.

In addition to the Invitation for Bids, the Bidding Documents is a compilation of the following sections:

- a. **Invitation of Bids : Section – I**
- b. **Instructions to Bidders : Section – II**
- c. **General Terms & Conditions of Contract : Section – III**
- d. **Erection Conditions of Contract : Section – IV**
- e. **Technical Specification & Guaranteed Technical Particulars : Section – V**
- f. **Price Bidding Schedule : Section – VI**

3.2 UNDERSTANDING OF BIDDING DOCUMENTS

A prospective Bidder is expected to examine all instructions, forms, terms and specifications in the Bidding Documents and fully inform himself as to all the conditions and matters which may in any way affect the scope of work or the cost thereof. Failure to furnish all information required by the Bidding Documents or submission of a Bid not substantially responsive to the Bidding Documents in every respect shall be at the Bidder's risk and may result in the rejection of its Bid.

4.0 CLARIFICATIONS ON BIDDING DOCUMENTS

- 4.1** If prospective Bidder finds discrepancies or omissions in the specifications and documents or is in doubt as to the true meaning of any part or requires any clarification on Bidding Documents should make the request / notify the tender inviting authority of TSECL in writing. The concerned authority of TSECL shall respond in writing to any request for such clarification of the Bidding Documents, which it receives not later than fifteen (15) days prior to the deadline for submission of bids stipulated in tender notice. Written copies of the response (including an

explanation of the query but without identifying its source) shall be sent to all prospective bidders who have requested for clarification.

- 4.2 Verbal clarification and information given from any offices of TSECL or his employee(s) or his representative (s) shall not in any way be binding on TSECL.

5.0 AMENDMENT TO BIDDING DOCUMENTS

- 5.1 At any time prior to the deadline for submission of bids, TSECL may, for any reason, whether at its own initiative or in response to a written clarification requested by a prospective Bidder at least 15 (fifteen) days before the deadline for submission of bid, modify the Bidding Documents by amendment (s).

- 5.2 The amendment shall be notified in writing or by Fax or Post or Email to all prospective Bidders, who have requested for clarification, at the address contained in the letter of request for clarification. TSECL shall bear no responsibility or liability arising out of non-receipt of the same in time or otherwise.

- 5.3 In order to afford prospective bidders reasonable time to take the amendment into account in preparing their bids, TSECL may, at its discretion, extend the deadline for submission of bids.

- 5.4 Such amendments, clarifications, etc shall be binding on the bidders and shall be given due consideration by the bidders while they submit their bids and invariably enclose such documents as a part of the Bid.

6.0 PREPARATION OF BIDS

6.1 LANGUAGE OF BID

The Bid prepared by the Bidders and all correspondence and documents relating thereto, exchanged by the Bidder and TSECL, shall be written in English language, provided that any printed literature furnished by the bidder may be written in another language so long as accompanied by an English translation of its pertinent passages. Failure to comply with this may disqualify a bid. For purposes of interpretation of the bid, the English translation shall govern.

7.0 LOCAL CONDITIONS

- 7.1 It shall be imperative on each bidder to fully inform him of all local conditions and factors, which may have any effects on the execution of the contract covered under these documents and specifications. The owner shall not entertain any request for clarification from bidders, regarding such local conditions.

- 7.2 It must be understood and agreed that such factors as above have properly been investigated and considered while submitting the proposals. No claim for financial adjustment to the Contract awarded under these specifications and documents shall be entertained by TSECL. Neither any change in the time schedule of the Contract nor any financial adjustments arising thereof shall be permitted by TSECL.

8.0 DOCUMENTS COMPRISING THE BID:

The Bid shall be submitted in **2 (two) parts** in **separate sealed envelopes** properly **super scribing tender no., name of work and bid opening date** as follows:

Part – I: Bid Guarantee & Pre-Qualification Bid Data & Techno-Commercial Bid

- i) Containing Bid earnest money and cost of bid document as per the stipulations of the Bid Documents in a separate sealed envelope.

- ii) Containing Documentary Evidence of the Bidder fulfilling the Qualifying Requirements stipulated in the NIT / Bid Document.
 - a. Bidder shall furnish photo copies of original documents of registration and place of business.
 - b. Written power of attorney / Board resolution of the signatory of the bid.
 - c. Copy of audited annual accounts of the company for the last 3 (three) years to verify the average annual turnover as per qualifying requirement.
 - d. Copies of PAN Card, **GST Registration Certificate**.
 - e. The bidders who have earlier failed to execute the purchase order(s) to any power utility and or black listed by any power utility shall not be eligible to participate in this tender. In this context a declaration duly attested by notary shall be attached with the bid that the bidder is not blacklisted by any power utility for bad performance (**Annexure – IV**). In absence of such self declared performance certificate, the bidder may not qualify the techno-commercial evaluation. Any litigation against the bidder but not cleared by court shall be produced along with tender document (**Annexure – V**).
- iii) Containing Bidders Technical Proposal, drawings etc. along with his Commercial Terms, Payment Terms in conformity with the Bid Documents.

Part – II: Price Bid

The price schedule as per the format indicated in the Bid Price Schedule (**Section – VI**). The price should be quoted both in figures and words (sub-total and total value). If there is no meaning of words the figures will be considered otherwise words are final. **No other price schedule format, other than this (Section – VI) shall be acceptable and in such event of submission in their own price format, the bids shall be cancelled.**

Notwithstanding anything contained herein above, TSECL reserves the right to assess the capacity and capability of the bidder to supply the transformer.

9.0 SCOPE OF THE PROPOSAL

9.1 The scope of the proposal shall cover all the design, engineering drawing etc. specified under the accompanying Technical Specification. It shall include the following:

- a. Detailed design and engineering of the equipment / materials as applicable.
- b. Complete manufacture including testing at works.
- c. Providing engineering drawing, data, operation, manual, etc. for approval by TSECL.
- d. Packing and transportation from the manufacturer's works to the Site including transit insurance.
- e. Receipt, storage, preservation and conservation of materials at the Site including storage cum erection insurance.
- f. Associated civil works for foundation of tower structures.
- g. Dismantling of existing tower, conductor, insulator etc. and re-stringing of conductor.
- h. Reliability tests and performance and guarantee tests on completion of commissioning.
- i. TAKING OVER CERTIFICATE by TSECL's Engineer-in-charge.

9.2 Bids containing deviations from provisions relating to the following clauses shall be considered as non-responsive:

- a. **Price Basis and Payments:** Clause 11.0, Section – II & 32.0, Section – III
- b. **Bid Guarantee:** Clause 8.0, Section – I
- c. **Contract Performance Guarantee:** Clause 8.0, Section – I
- d. **Liquidated Damages:** Clause 13.0, General Condition of Contract, Section – III
- e. **Guarantee / Warrantee:** Clause 14.0 of Section – III

The determination of a Bid's responsiveness will be based on the contents of the Bid itself without recourse to extrinsic evidence.

9.3 Bids not covering the entire Scope of Work as above shall be treated as incomplete and hence rejected.

10.0 BID PRICE

10.1 The Bidder shall quote **firm** unit rates in the appropriate schedule of the Bid Document, for the entire period of schedule / extended schedule if any without any additional cost to TSECL.

10.2 The Bidder shall also furnish the price breakup in the appropriate schedule of Bid Form to indicate the following:

- i) Ex-works price of the equipment / materials (including tools and tackles etc.)
- ii) Charges for inland transportation and insurance for delivery of the equipments / materials up to their final destinations.
- iii) Lump-sum charges towards unloading, storage & transit insurance, erection, testing and commissioning.
- iv) GST, Octroi duty / entry tax, GST(Service tax) and any other levies legally payable on the transactions between the Owner and the Bidder as per prevailing rates.

11.0 PRICE BASIS AND PAYMENTS

11.1 The bidders shall quote **firm Price** in their price bidding schedule for the entire Scope of Work covered under the Technical Specification as required in the Bid, till taking over by TSECL.

11.2 Bidder shall indicate Bid prices in Indian Rupees only & **Price breakup must be submitted as Annexure – I (Price Break-up).**

12.0 TAXES AND DUTIES

12.1 The estimated cost put to tender is inclusive of GST, Freight & Insurance including cost of inspection, testing & commissioning and any other taxes & duties as applicable. The bid price shall also be inclusive of all above accordingly.

12.2 TSECL shall not bear any liability on any tax account.

12.3 Income Tax will be deducted at source and TSECL shall issue TDS certificate accordingly.

12.4 To assess the implication of statutory variation in GST on offered prices, bidders should submit Price Break-up as per proforma enclosed with the bid document (**Annexure – I**).

13.0 TIME SCHEDULE

13.1 The basic consideration and the essence of the Contract shall be strict adherence to the time schedule for performing the specified works.

13.2 The requirement of completion schedule for the works is mentioned in **clause – 3.0 of (Section – I** of this document.

- 13.3 The completion schedule as stated in **clause – 3.0 of Section – I** shall be one of the major factors in consideration of the Bids.
- 13.4 TSECL reserves the right to request for a change in the work schedule during post-bid discussion with successful bidder.
- 13.5 The successful Bidder shall be required to submit detailed BAR CHART and finalize the same with TSECL, as per the requirement of completion schedule.
- 14.0 **CONTRACT QUALITY ASSURANCE**
- 14.1 The Bidder shall include in his proposal, the quality assurance programme containing the overall quality management and procedures which he proposed to follow in the performance of the works during various phases, as detailed in relevant clause of the General Technical Conditions.
- 14.2 At the time of award of Contract, the detailed quality assurance programme to be followed for the execution of the contract shall be mutually discussed and agreed to and such agreed programme shall form part of the contract.
- 15.0 **INSURANCE**
- The bidder's insurance liabilities pertaining to the Scope of Work is detailed out in clauses titled insurance in General Terms & Conditions of Contract and in Erection Conditions of Contract. Bidder's attention is specifically invited to these clauses. The bid price shall include all the cost in pursuance of fulfilling all the insurance liabilities including storage & erection under the Contract.
- 16.0 **BRAND NAMES / MAKE LIST**
- All the equipments / materials shall be supplied out of the list of the makes as stipulated in **Annexure – VI** attached with this document. Any deviation in this regard shall not be entertained and bids having such deviation shall be rejected. In case brand names are not specified in the attached technical specification, standard equipments / materials shall be supplied.
- 17.0 **BID GUARANTEE**
- 17.1 The Bidder shall furnish, as part of its Bid, earnest money for an amount as specified in the Notice Inviting Tender (NIT) in the shape of demand draft / Banker cheque in favour of Tripura State Electricity Corporation Limited payable on any schedule bank payable at Agartala, West Tripura.
- 17.2 The earnest money is required to protect TSECL against the risk of Bidder's conduct, which would warrant the earnest money forfeiture pursuant to **Para 17.7**.
- 17.3 The earnest money shall be deposited in Indian rupees only.
- 17.4 Any bid not secured in accordance with **Para 17.1** and **17.3** above shall be rejected by TSECL as non-responsive.
- 17.5 The earnest money of the unsuccessful Bidders shall be discharged / returned as promptly as possible as but not later than 60 days after the expiration of the period of bid validity prescribed by the Owner.
- 17.6 The earnest money of the successful Bidder may be adjusted with the performance guarantee required to be furnished on award of contract as per **clause 8.0 of Section – I**.
- 17.7 The earnest money shall be forfeited:

- a) If a Bidder withdraws its bid during the period of bid validity specified by the Bidder on the bid form; or
- b) In case of a successful Bidder fails:
 - i) to sign the contract; or
 - ii) to furnish the performance guarantee.

17.8 No interest shall be payable by TSECL on the above earnest money.

18.0 PERIOD OF VALIDITY OF BIDS

18.1 Bids shall remain valid for 180 days after the date of bid opening prescribed by TSECL, unless otherwise specified in this document. A Bid valid for a shorter period shall be rejected by TSECL as non-responsive.

18.2 In exceptional circumstances, TSECL may solicit the Bidder's consent to an extension of the period of Bid validity. The request and the response thereto shall be made in writing (including phone or fax). The Earnest money provided under **clause 3.0 of Section – I** shall also be retained up to the extended period. No interest shall be payable by TSECL for retaining the earnest money up to the extended period. A Bidder may refuse the request without forfeiting the earnest money deposited by him. A Bidder granting the request shall not be required or permitted to modify his Bid.

SUBMISSION OF BIDS

19.0 FORMAT OF BID

19.1 The Bidder shall prepare two copies of the Bid, clearly marking the "Original Bid" and "Copy of Bid". In the event of any discrepancy between them, the original shall prevail.

19.2 The "original" and "copy of bid" shall be typed or written in indelible ink and shall be signed by the Bidder or a person or persons duly authorized by the bidder to sign the bidding document. The letter of authorization shall be indicated by written power-of-attorney accompanying the Bid. All pages of the Bid, except for un-amended printed literature, shall be initialed by the person or persons signing the Bid.

19.3 The Bid shall be submitted in 2 (two) parts as described in **clause no. 8.0 of Section – II**.

19.4 The bid shall contain the bid document downloaded from the website duly signed by the Bidder or persons authorized by the bidder in all pages which will form a part of agreement with the successful bidder.

19.5 The Bid shall contain no interlineations, erasures or overwriting except as necessary to correct errors made by the Bidder, in which case such corrections shall be initialed by the person or persons signing the Bid.

20.0 SIGNATURE OF BIDS

20.1 The Bid must contain the name, residence and place of business of the person or persons making the Bid and shall be signed and sealed by the Bidder with his usual signature. The names of all persons signing shall also be typed or printed below the signature.

20.2 Bid by a partnership must be furnished with full names of all partners and be signed with the partnership name, followed by the signature(s) and designation(s) of the authorized partner(s) or other authorized representative(s).

- 20.3** Bids by Corporation / Company must be signed with the legal name of the Corporation / Company by the President, Managing Director or by the Secretary or other person or persons authorized to Bid on behalf of such Corporation / Company in the matter.
- 20.4** A Bid by a person who affixes to his signature the word 'President', 'Managing Director', 'Secretary', 'Agent', or other designation without disclosing his principal shall be rejected.
- 20.5** Satisfactory evidence of authority of the person signing on behalf of the Bidder shall be furnished with the Bid.
- 20.6** The Bidder's name stated on the proposal shall be exact legal name of the firm.
- 20.7** Bids not conforming to all the above requirements of **Para 21.0** above may be disqualified.
- 21.0 SEALING AND MARKING OF BIDS**
- 21.1** The Bidders shall seal the "original" and "Duplicate Copy of Bid" in an inner and an outer envelope, duly marking the envelopes as "Original" and "Duplicate Copy".
- 21.2** The inner and outer envelopes shall be:
- a. Addressed to TSECL at the following address:
**Dy. General Manager,
Transmission Division,
Tripura State Electricity Corporation Limited,
Agartala.**
 - b. Bear the NIT No, Name of work & date of opening. The inner envelope shall indicate the name and address of the Bidder to enable the Bid to be returned unopened in case it is declared "late" or "rejected".
- 21.3** If the outer envelope is not sealed and marked as required by **para 21.2(b)**, TSECL shall assume no responsibility for the Bid's misplacement or premature opening.
- 21.4** The earnest money must be submitted in a separate sealed envelope.
- 22.0 DEADLINE FOR SUBMISSION OF BIDS**
- 22.1** The Bidders have the option of sending the Bid by registered post or submitting the Bid in person. Bids submitted by telex / telegram / fax shall not be accepted. No request from any Bidder to TSECL to collect the Bid from airlines, cargo agents etc. shall be entertained.
- 22.2** Bids shall be received by TSECL at the address specified under **para 21.2(a) of section – II**, not later than the time & date mentioned in the Invitation to Bid.
- 22.3** TSECL may, at its discretion, extend this deadline for the submission of Bids, in which case all rights and obligations of TSECL and Bidders previously subject to the deadline shall thereafter be subject to the deadline as extended.
- 23.0 LATE BIDS**
- 23.1** Any Bid received by TSECL after the time & date fixed or extended for submission of Bids prescribed by TSECL, shall be rejected and returned unopened to the Bidder.
- 24.0 MODIFICATION AND WITHDRAWAL OF BIDS**
- 24.1** The Bidder may modify or withdraw its Bid after the Bid's submission provided that written notice of the modification or withdrawal is received by TSECL prior to the deadline prescribed for submission of Bids.

- 24.2** The Bidder's modification or withdrawal notice shall be prepared, sealed, marked and dispatched in accordance with the provisions of **clause 21.0 of section – II**.
- 24.3** No Bid shall be modified / withdrawn in the interval between the deadline for submission of Bids and the expiration of the period of Bid validity specified by the Bidder on the Bid Form. Withdrawal / modification of a Bid during this interval shall result forfeiture of the earnest money deposited by the bidder.
- 25.0 INFORMATION REQUIRED WITH THE PROPOSAL**
- 25.1** The Bids must clearly indicate the name of the manufacturer, the type of model of each principal item of equipment proposed to be furnished and erected. The Bid shall also contain drawings and descriptive materials indicating general dimensions, principles of operation, the extent of pre-assembly involved, major construction equipment proposed to be deployed, method of erection and the proposed erection organizational structure.
- 25.2** The above information shall be provided by the Bidder in the form of separate sheets, drawings, catalogues, etc. in five copies.
- 25.3** Any bid not containing sufficient descriptive material to describe accurately the equipment proposed, shall be treated as incomplete and hence rejected. Such descriptive materials and drawings submitted by the Bidder shall be retained by TSECL. Any major departure from these drawings and descriptive material submitted shall not be permitted during the execution of the Contract without specific written permission of TSECL.
- 25.4** Oral statements made by the Bidder at any time regarding quality, quantity or arrangement of the equipment or any other matter shall not be considered.
- 25.5** Standard catalogue pages and other documents of the Bidder may be used in the Bid to provide additional information and data as deemed necessary by the Bidder.
- 25.6** In case the proposal information contradicts specification requirements; the specification requirements shall govern, unless otherwise brought out clearly in the technical / commercial deviation schedule.

BID OPENING AND EVALUATION

26.0 OPENING OF BIDS BY TSECL

- 26.1** First the cover containing Earnest money and cost of bidding document as per **clause 8.0 of Section – I** shall be opened and then documents of qualifying requirement as per **clause 4.0 of Section – I** & Techno Commercial bid (Part – I) shall be opened. Only those Bidders whose Bid contains Earnest money and documents of qualifying requirements as per the stipulations of Section – I shall be considered eligible for opening of Pre-qualifying & Techno-economical Bid which shall also be opened on the same day. The Price Bid (Part – II) of the eligible bidders on the basis of evaluation of Part – I Bid shall be opened on a subsequent date. The date of opening of the price Bid (Part – II) shall be notified in writing or by Fax to all qualified Bidders.

In case the above schedule date of opening of Bid is declared holiday by the State / Central Govt. the Bid will be opened on the following working day keeping time unaltered.

- 26.2** The Bid and its all parts shall be opened in the presence of Bidders' representatives (up to 2 persons) who choose to attend at the date and time for opening of bids indicated in the NIT or in case any extension has been given thereto, on the extended bid opening date and time notified to all the Bidders, who have purchased the Bidding Documents. The Bidders' representatives who are present shall sign a register evidencing their attendance.

No person / agent shall be allowed to be present during opening of Bid without valid authorization from the concerned bidder.

26.3 The Bidders names, bid prices, modifications, bid withdrawals and the presence or absence of the requisite earnest money and such other details as TSECL, at its discretion, may consider appropriate shall be announced at the opening.

26.4 No electronic recording devices shall be permitted during bid opening and Mobile phone shall be OFF mode.

27.0 CLARIFICATION OF BIDS

27.1 To assist in the examination, evaluation and comparison of Bids, TSECL may, at its discretion, ask the Bidder for a clarification of its Bid. The request for clarification and the response shall be in writing and no change in the price or substance of the Bid shall be sought, offered or permitted.

28.0 PRELIMINARY EXAMINATION

28.1 TSECL shall examine the Bids to determine whether they are complete, whether any computational errors have been made, whether required sureties have been furnished, whether the documents have been properly signed and whether the Bids are generally in order.

28.2 Arithmetical errors shall be rectified on the following basis:

If there is a discrepancy between the unit price and the total price that is obtained by multiplying the unit price and quantity, the unit price shall prevail and total price shall be corrected. If there is a discrepancy between words and figures, the amount in words shall prevail. If there is no meaning of word the figure will be considered. If there is a discrepancy between total and sub-total, the sub-total shall be considered. If the Bidder does not accept the correction of the errors as above, his bid shall be rejected and the amount of earnest money shall be forfeited.

The Bidder shall ensure that the prices furnished by him are complete. In the case of not quoting of rates of any item (supply / erection) in the specified price schedules of the Bid Form, TSECL shall be entitled to consider that the price is absorbed by the bidder and during evaluation and placement of order no amount will be considered.

28.3 Prior to the detailed evaluation, TSECL shall determine the substantial responsiveness of each Bid w.r.t. Bidding Documents. For purpose of these Clauses, a substantially responsive Bid is one which conforms to all the terms and conditions of the Bidding Documents without material deviations. TSECL determination of a Bid's responsiveness shall be based on the contents of the Bid itself without recourse to extrinsic evidence.

28.4 A Bid determined as not substantially responsive shall be rejected by TSECL and may not subsequently be made responsive by the Bidder by correction of the non-conformity.

28.5 TSECL may waive any minor non-conformity or irregularity in a Bid which does not constitute a material deviation, provided such waiver does not prejudice or affect the relative ranking of any Bidder.

29.0 DEFINITIONS AND MEANINGS

29.1 For the purpose of the evaluation and comparison of bids, the following meanings and definition shall apply: -

- a. 'Bid Price' shall mean the base price quoted by each Bidder in his proposal for the complete scope of works.

- b. "Evaluated Bid Price" shall be the summation of 'Bid Price', 'Differential Price' and 'Cost Compensation for Deviations'.

29.2 Calculation of Differential Price & Cost Compensation for Deviations.

- 29.2.1 Deviations from the Bidding Documents in so far as practicable shall be converted to a Rupee value and added to the Bid Price to compensate for the deviation from the Bidding Documents while evaluating the Bids. In determining the Rupee value of the deviations, TSECL shall use parameters consistent with those specified in the specifications and documents and/or other information as necessary and available to TSECL.

30.0 COMPARISON OF BIDS

- 30.1** The cost of mandatory spares shall not be taken into account for evaluation of bids.
- 30.2** Evaluated bid prices of all the bidders shall be compared among themselves to determine the lowest evaluated Bid and, as a result of this comparison, the lowest Bid shall be selected for consideration of award of the Contract.

31.0 CONTACTING THE OWNER

Bids shall be deemed to be under consideration immediately after they are opened and until such time official intimation of award / rejection is made by TSECL to the Bidders. While the bids are under consideration, Bidders and / or their representatives or other interested parties are advised to refrain from contacting by any means, the Owner and / or his employees / representatives on matters relating to the bids under consideration. TSECL, if necessary, shall obtain clarifications on the bids by requesting for such information from any or all the Bidders, either in writing or through personal contacts as may be necessary. Bidders shall not be permitted to change the substance of the bids after the bids have been opened.

AWARD OF CONTRACT

32.0 AWARD CRITERIA

- 32.1** TSECL shall award the Contract to the successful Bidder whose bid has been determined to be substantially responsive and has been determined as technically acceptable and lowest evaluated Bid, provided further that the Bidder is determined to be qualified to perform the Contract satisfactorily. TSECL shall be the sole judge in this regard.
- 32.2** Further, TSECL reserves the right to award separate Contracts to two or more parties in line with the terms and conditions specified in the accompanying Technical Specifications.

33.0 OWNER'S RIGHT TO ACCEPT ANY BID AND TO REJECT ANY OR ALL BIDS

- 33.1** TSECL reserves the right to accept or reject any bid, and to annul the bidding process and reject all bids at any time prior to award of contract, without thereby incurring any liability to the affected Bidder or Bidders or any obligation to inform the affected Bidder or Bidders of the grounds for such action.

34.0 NOTIFICATION OF AWARD

- 34.1** Prior to the expiration of the period of bid validity and extended validity period, if any, TSECL shall notify the successful Bidder in writing by registered letter or by telex or FAX, to be confirmed in writing by registered letter, that his Bid has been accepted.
- 34.2** The Notification of Award / Letter of Award shall constitute the formation of the Contract.
- 34.3** Upon the successful Bidder's furnishing of Contract Performance Guarantee pursuant to **Clause 8.0 of Section – I**. TSECL shall promptly notify each unsuccessful Bidder and will discharge its bid guarantee, pursuant to **Clause 17.0 (Section – II)**.

35.0 SIGNING OF CONTRACT

35.1 At the same time as TSECL notifies the successful Bidder that its bid has been accepted, TSECL shall send the Bidder the detailed Letter of Award.

35.2 Within 15 (fifteen) days of receipt of the detailed Letter of Award, the successful Bidder shall convey in writing unconditional acceptance of the Letter of Award and shall attend the respective office of TSECL for signing the contract agreement.

36.0 CONTRACT PERFORMANCE GUARANTEE:

36.1 As a Contract Performance Security, the successful Bidder, to whom the work is awarded, shall be required to furnish a contract Performance Guarantee in the shape of demand draft in favour of Tripura State Electricity Corporation Limited payable at Agartala, West Tripura or in the shape of Bank Guarantee from a Nationalized / Scheduled Indian Bank having paid up capital (net of any accumulated losses) of Rs.100 Crores or above (the latest annual report of the Bank should support compliance of capital adequacy ratio requirement) in the form attached as **Annexure – II** in favour of **TRIPURA STATE ELECTRICITY CORPORATION LIMITED**. The guarantee amount shall be equal to ten percent (10%) of the Contract Price and it shall guarantee the faithful performance of the Contract in accordance with the terms and conditions specified in these documents and specifications. The earnest money deposited at the time of tender shall be adjusted with the contract performance guarantee.

The contract performance guarantee submitted in the shape of Bank Guarantee shall be valid up to guarantee period.

36.2 The Performance Guarantee shall cover additionally the following guarantees to TSECL:

- a. The successful Bidder guarantees the successful and satisfactory operation of the equipment supplied and erected under the Contract, as per the specifications and documents.
- b. The successful Bidder further guarantees that the equipment provided and installed by him shall be free from all defects in design, material and workmanship and shall upon written notice from TSECL fully remedy free of expenses to TSECL such defects as developed under the normal use of the said equipment within the period of guarantee specified in the relevant clause of the General Terms and conditions.

36.3 The Contract Performance Guarantee is intended to secure the performance of the entire contract. However, it is not to be construed as limiting the damages under clause entitled "Equipment Performance Guarantee" in Technical Specifications and damages stipulated in other clauses in the Bidding Documents.

36.4 The Contract performance Guarantee submitted in the shape of demand draft shall be returned to the Contractor without any interest at the end of successful completion and commissioning of the work against a Bank Guarantee of equivalent amount from any Public Sector / scheduled Indian Bank valid up to the Guarantee period. The Bank Guarantee such deposited shall be discharged after expiry of Guarantee period.

36.5 The contract performance Guarantee shall be forfeited: -

- a) If the contractor fails to start the work as per approved BAR CHART for reasons solely rest on him.
- b) If the contractor left / suspends the work without prior written intimation to the owner's Engineer in charge of the work stating the reasons for such suspension of work.
- c) If the contractor left / suspends the work for reasons which are not acceptable to TSECL.

37.0 CORRUPT OR FRAUDULENT PRACTICES

37.1 TSECL expects the bidders / suppliers / contractors to observe the highest standards of ethics during the procurement and execution of such contracts. In pursuance of this policy, TSECL

- a. Defines, for the purpose of this provision, the terms set forth below as follows:
 - i) "Corrupt practice" means offering, giving, receiving or soliciting of anything of value to influence the action of a official in the procurement process or in contract execution, and
 - ii) "Fraudulent practice" means a misrepresentation of facts in order to influence a procurement process or the execution of a contract to the detriment of the owner, and includes collusive practice among bidders (prior to or after bid submission) designed to establish bid prices at artificial non-competitive levels and to deprive the owner from the benefits of free and open competition.
- b. Will reject a proposal for award if it determines the bidder recommended for award has engaged a corrupt or fraudulent practice in competing for the contract in question.
- c. Will declare a firm ineligible, either indefinitely or for a stated period of time, if TSECL at any time determines that the firm has engaged in corrupt / fraudulent practices in competing for, or in executing the contract.

SECTION – III

GENERAL TERMS & CONDITIONS OF CONTRACT

1.0 DEFINITION OF TERMS

- 1.1 'The Contract' means the agreement entered into between Tripura State Electricity Corporation Limited and Contractor as per the Contract Agreement signed by the parties, including all attachments and appendices thereto and all documents incorporated by reference therein.
- 1.2 'Owner' shall mean **TRIPURA STATE ELECTRICITY CORPORATION LIMITED (TSECL)** and shall include their legal representatives, successors and assigns.
- 1.3 'Contractor' or 'Manufacturer' shall mean the Bidder whose bid shall be accepted by TSECL for award of the Works and shall include such successful Bidder's legal representatives, successors and permitted assigns.
- 1.4 'Sub-contractor' shall mean the person named in the Contract for any part of the Works or any person to whom any part of the Contract has been sublet by the Contractor with the consent in writing of the owner's Engineer in charge of the work and shall include the legal representatives, successors and permitted assigns of such person.
- 1.5 'Consulting Engineer' / 'Consultant' shall mean Power Grid Corporation of India Ltd. or any firm or person duly appointed as such from time to time by TSECL.
- 1.6 The terms 'Equipment', 'Stores' and 'Materials' shall mean and include equipment, stores and materials to be provided by the Contractor under the Contract.
- 1.7 'Works' shall mean and include the furnishing of equipment, labour and services, as per the Specifications and complete erection, testing and putting into satisfactory operation including all transportation, handling, unloading and storage at the Site as defined in the Contract.
- 1.8 '**Specifications**' shall mean the **Specifications and Bidding Documents forming a part of the Contract and such other schedules and drawings as may be mutually agreed upon.**
- 1.9 'Site' shall mean and include the land and other places on, into or through which the works and the related facilities are to be erected or installed and any adjacent land, paths, street or reservoir which may be allocated or used by TSECL or Contractor in the performance of the Contract.
- 1.10 The term 'Contract Price' shall mean the item wise price / lump-sum price quoted by the Contractor in his bid with additions and / or deletions as may be agreed and incorporated in the Letter of Award, for the entire scope of the works.
- 1.11 The term 'Equipment Portion' of the Contract price shall mean the ex-works value of the equipment.
- 1.12 The term 'Erection Portion' of the Contract price shall mean the value of field activities of the works including erection, testing and putting into satisfactory operation including successful completion of performance and guarantee tests to be performed at Site by the Contractor including cost of insurances.
- 1.13 'Manufacturer's Works' or 'Contractor's Works', shall mean the place of work used by the manufacturer, the Contractor, their collaborators / associate or sub-contractors for the performance of the Contract.

- 1.14** Engineer-in-charge shall mean the person nominated by TSECL from time to time and shall include those who have been expressly authorized or approved by the Purchaser / owner to act for and on his behalf for all functions pertaining to operation of this Contract. All functions pertaining to this Contract means all acts necessary for execution of the Contract, coordinating between the different agencies and final closing of the Contract.
- 1.15** 'Inspector' shall mean TSECL or any person nominated by TSECL from time to time, to inspect the equipment; stores or Works under the Contract and / or the duly authorized representative of TSECL.
- 1.16** 'Notification of Award of Contract' / Letter of Award' / Telex of Award' shall mean the official notice issued by TSECL notifying the Contractor that his bid has been accepted.
- 1.17** 'Date of Contract' shall mean the date on which Notification of Award of Contract / Letter of Award / Telex of Award has been issued.
- 1.18** 'Month' shall mean the calendar month. 'Day or 'Days', unless herein otherwise expressly defined, shall mean calendar day or days of 24 hours each.
A 'Week' shall mean continuous period of seven (7) days.
- 1.19** "Writing" shall include any manuscript, type written or printed statement, under or over signature and / or seal as the case may be.
- 1.20** When the words 'Approved' subject to Approval', 'Satisfactory', 'Equal to', 'Proper', 'Requested', 'As Directed', 'Where Directed', 'When Directed', 'Determined by', 'Accepted', 'Permitted', or words and phrases of like importance are used, the approval, judgment, direction etc. is understood to be a function of TSECL.
- 1.21** "Test on Completion" shall mean such tests as prescribed in the Contract to be performed by the Contractor before the work is Taken Over by TSECL.
- 1.22** 'Start Up' shall mean the time period required to bring the equipment covered under the Contract from an inactive condition, when construction is essentially complete, to the state ready for trial operation. The Start Up period shall include preliminary inspection and checkout of equipment and supporting sub-system, initial operation of the complete equipment covered under the Contract to obtain necessary pre-trial operation data, perform calibration and corrective action, shut down, inspection and adjustment prior to the trial operation period.
- 1.23** "Initial Operation" shall mean the first integral operation of the complete equipment covered under the Contract with the sub-system and supporting equipment in service or available for service.
- 1.24** 'Trial Operation', Reliability Test', 'Trial Run', 'Completion Test' shall mean the extended period of time after the start up period. During this trial operation period, the unit shall be operated over the full load range.
The length of Trial Operation shall be as determined by the Engineer of TSECL unless otherwise specified elsewhere in the Contract.
- 1.25** 'Performance and Guarantee Test' shall mean all operational checks and tests required to determine and demonstrate capacity, efficiency and operating characteristics as specified in the Contract Documents.
- 1.26** The term 'Final Acceptance / Taking Over' shall mean written acceptance of the Works performed under the Contract by TSECL, after successful commissioning / completion of

Performance and Guarantee Tests, as specified in the accompanying Technical Specification or otherwise agreed in the Contract.

- 1.27** "Commercial Operation" shall mean the Conditions of Operation in which the complete equipment covered under the Contract is officially declared by TSECL to be available for continuous operation at different loads up to and including rated capacity. Such declaration by TSECL, however, shall not relieve or prejudice the Contractor of any of his obligations under the Contract.
- 1.28** 'Guarantee period' / 'Maintenance Period' shall mean the period during which the Contractor shall remain liable for repair or replacement of any defective part of the works performed under the contract.
- 1.29** 'Latent Defects' shall mean such defects caused by faulty designs, material or workmanship which cannot be detected during inspection, testing etc, based on the technology available for carrying out such tests.
- 1.30** 'Drawings', 'Plans' shall mean all:
- a. Drawing furnished by TSECL as a basis for Bid Proposals.
 - b. Supplementary drawings furnished by TSECL to clarify and define in greater detail the intent of the Contract.
 - c. Drawings submitted by the Contractor with his Bid provided such drawings are acceptable to TSECL.
 - d. Drawings furnished by TSECL to the Contractor during the progress of the Work; and
 - e. Engineering data and drawings submitted by the Contractor during the progress of the Work provided such drawings are acceptable to the owner's Engineer in charge of the work.
 - f. As built up drawings to be submitted by the contractor on completion of the project with reproducible.
- 1.31** "Codes" shall mean the following including the latest amendments and / or replacement, if any:
- a. A.S.M.E. Test Codes.
 - b. A.I.E.E. Test Codes.
 - c. American Society of Testing Materials Codes.
 - d. Standards of the Indian Standards Institutions.
 - e. I.E.E. standards.
 - f. I.E.C. standards.
 - g. Other Internationally approved standards and / or Rules and Regulations touching the subject matter of the Contract.
- 1.32** Words imparting 'Person' shall include firms, companies, corporation and association or bodies of individuals.
- 1.33** Terms and expressions not herein defined shall have the same meaning as are assigned to them in the Indian Sale of Goods Act (1930), failing that in the Indian Contract Act (1872) and failing that in the General Clauses Act (1897) including amendments thereof if any.

- 1.34 In addition to the above the following definitions shall also apply.
- a. 'All equipment and materials' to be supplied shall also mean 'Goods'.
 - b. 'Constructed' shall also mean 'erected and installed'.
 - c. 'Contract Performance Guarantee shall also mean 'Contract Performance Security'.

2.0 APPLICATION

These General Conditions shall apply to the extent that they are not superseded by provisions in other parts of the Contract.

3.0 STANDARDS

The Goods supplied under this Contract shall conform to the standards mentioned in the Various Technical Specifications and when no applicable standard is mentioned; to the authoritative standard appropriate to the Goods and such standards shall be the latest issued by the concerned institution.

4.0 LANGUAGE AND MEASURES

All documents pertaining to the Contract including specification, Schedules, notices, correspondence, operating and maintenance instructions, drawings or any other writing shall be written in English language. The Metric System of measurement shall be used exclusively in the Contract.

5.0 CONTRACT DOCUMENTS

5.1 The term "Contract Documents" shall mean and include the following which shall be deemed to form an integral part of the Contract:

- a. Invitation of Bid including letter forwarding the Bidding Documents, Instructions to Bidders, General Terms and Conditions of Contract, Erection Conditions of Contract and all other documents included under the Special Conditions of Contract and various other sections.
- b. Specifications of the equipment to be furnished and erected under the Contract as brought out in the accompanying Technical Specification.
- c. Contractor's Bid proposal and the documents attached there-to including the letter of clarifications thereto between the Contractor and TSECL prior to the Award of Contract.
- d. All the materials, literature, data and information of any sort given by the Contractor along with his bid, subject to the approval of TSECL.
- e. Letter of Award and any agreed variations of the conditions of the documents and special terms and conditions of contract if any.

6.0 USE OF THE CONTRACT DOCUMENTS AND INFORMATION

The Contractor shall not communicate or use in advertising, publicity, sales releases or in any other medium, photographs or other reproduction of the Works under this contract, or descriptions of the site, dimensions, quantity, quality, or other information, concerning the Works unless prior written permission has been obtained from TSECL.

7.0 JURISDICTION OF CONTRACT

The laws applicable to the Contract shall be the laws in force in India. The Courts of **Agartala** shall have exclusive jurisdiction in all matters arising under this Contract. No case can be transferred to any place than Agartala.

8.0 MANNER OF EXECUTION OF CONTRACT

8.1 The contractor should attend the concerned office of TSECL within 15 (fifteen) days from the date of issue of the Letter of Award to the Contractor for signing the contract agreement.

8.2 The Contractor shall provide for signing of the Contract, Performance Guarantee, appropriate power of attorney and other requisite materials.

8.3 The Agreement shall be signed in two originals and the Contractor shall be provided with one signed original and the rest shall be retained by TSECL.

8.4 The Contractor shall provide free of cost to TSECL all the engineering data, drawings, and descriptive materials submitted with the Bid, in at least six (6) copies to form a part of the contract immediately after issue of Letter of Award.

8.5 Subsequent to signing of the Contract, the Contractor, at his own cost, shall provide TSECL with at least ten (10) true copies of Agreement and one soft copy including 6 (six) hard copies of the approved drawings within fifteen (15) days after the signing of the Contract.

9.0 ENFORCEMENT OF TERMS

9.1 The failure of either party to enforce at any time any of the provisions of this Contract or any rights in respect thereto or to exercise any option therein provided, shall in no way be construed to be a waiver of such provisions, rights or options or in anyway to affect the validity of the Contract. The exercise by either party of any of its rights herein shall not prejudice either party from exercising the same or any other right it may have under the Contract.

10.0 COMPLETION OF CONTRACT

10.1 Unless otherwise terminated under the provisions of any other relevant clause, this Contract shall be deemed to have been completed on the date stipulated in the NIT.

GUARANTEE & LIABILITIES

11.0 TIME – THE ESSENCE OF CONTRACT

11.1 The time of completion of the Contract as stipulated in the bidding document by TSECL without or with modifications, if any, and so incorporated in the Letter of Award, shall be deemed to be the essence of the Contract. The Contractor shall so organize his resources and perform his Work as to complete it not later than the date agreed to.

11.2 The Contractor shall submit a detailed **BAR CHART / PERT NETWORK** consisting of adequate number of activities covering various key phases of the Work such as design, procurement, manufacturing, shipment and field erection activities within fifteen (15) days of the date of Notice of Award of Contract. This Bar Chart shall also indicate the interface facilities to be provided by TSECL and the dates by which such facilities are needed. The Contractor shall discuss with the owner's Engineer in charge of the work for finalization and approval of the Bar Chart by TSECL. The agreed Bar Chart shall form part of the contract documents. During the performance of the Contract, if in the opinion of the

owner's Engineer in charge of the work, proper progress is not maintained, suitable changes shall be made in the Contractor's operations to ensure proper progress without any cost implication to TSECL. The interface facilities to be provided by TSECL in accordance with the agreed Bar Chart shall also be reviewed while reviewing the progress of the Contractor.

11.3 Based on the agreed Bar Chart fortnightly reports shall be submitted by the Contractor as directed by the owner's Engineer in charge of the work.

11.4 Subsequent to the finalization of the Bar Chart, the Contractor shall make available to the owner's Engineer in charge of the work a detailed manufacturing programme in line with the agreed Contract Bar Chart. Such manufacturing programme shall be reviewed, updated and submitted to the owner's Engineer in charge of the work once in every month thereafter.

11.5 The above Bar Charts / manufacturing programme shall be compatible with TSECL computer environment and furnished to TSECL on such media as may be desired by TSECL.

12.0 EFFECTIVENESS OF CONTRACT

The Contract shall be considered as having come into force from the date of the Notification of Award, unless otherwise provided in the Notification of Award.

13.0 LIQUIDATED DAMAGES

13.1 For Equipment Portion (Excluding Spares) & Erection portion

13.1.1 If the Contractor fails to successfully complete the commissioning within the time fixed under the Contract, the Contractor shall pay to TSECL as liquidated damages and not as penalty a sum specified for each specified period of delays as below.

13.1.2 Equipment and materials will be deemed to have been delivered only when all its components, parts are also delivered. If certain components are not delivered in time, the equipment and materials will be considered as delayed until such time the missing parts are also delivered.

13.1.3 **The total amount of Liquidated Damages (LD) for delay under the Contract will be subject to a maximum of 5% of the Contract price for maximum 120 days delay exceeding stipulated completion period, beyond that imposition of percentage of LD lies at the discretion of TSECL. Fixing of LD shall be the sole responsibility of TSECL.**

13.2 For Spares

13.2.1 The liquidated damages for delay in supply of spares, beyond the dates stipulated under **clause 35.0 Section – III** shall be ½% (Half per cent) of the price of undelivered spares, per week or part thereof.

13.2.2 The total amount of liquidated damages for delay under the Contract shall be subject to a maximum of ten per cent (10%) of the value of spares ordered unless otherwise specifically mentioned.

14.0 GUARANTEE / WARRANTEE:

14.1 The Contractor shall warrant that the equipment shall be new, unused and in accordance with the contract documents and free from defects in material and workmanship for a period of twelve (12) calendar months commencing immediately upon the satisfactory commissioning. The Contractor's liability shall be limited to the replacement of any

defective parts in the equipment of his own manufacture or those of his sub-contractors under normal use and arising solely from faulty design, materials and/or workmanship provided always that such defective parts are repairable at the site and are not in the meantime essential in the commercial use of the equipment. Such replaced/defective parts shall be returned to the Contractor unless otherwise arranged. No repairs or replacement shall normally be carried out by owner's Engineer in charge of the work when the equipment is under the supervision of the Contractor's supervisory engineer. **The successful bidder shall submit BG (Bank Guarantee) valid up to the above guarantee / warrantee period.**

- 14.2** In the event of any emergency, where in the judgment of the owner's Engineer in Charge of work, delay would cause serious loss or damages, repairs or adjustment may be made by him or a third party chosen by him without advance notice to the Contractor and the cost of such work shall be paid by the Contractor. In the event such action is taken by the Dy. General Manager in Charge of work, the Contractor shall be notified promptly and he shall assist wherever possible in making necessary corrections. This shall not relieve the Contractor of his liabilities under the terms and conditions of the Contract.
- 14.3** If it becomes necessary for the Contractor to replace or renew any defective portions of the Works, the provision of this clause shall apply to portion of the Works so replaced or renewed until the expiry of twelve (12) months from the date of such replacement or renewal. If any defects are not remedied within a reasonable time, the owner's Engineer in Charge of work may proceed to do the work at the Contractor's risk and cost, but without prejudice to any other rights which TSECL may have against the Contractor in respect of such defects.
- 14.4** The repaired or new parts shall be furnished and erected free of cost by the Contractor. If any repair is carried out on his behalf at the site, the Contractor shall bear the cost of such repairs.
- 14.5** The cost of any special or general overhaul rendered necessary during the maintenance period due to defects in the equipment or defective work carried out by the Contractor shall be borne by the Contractor.
- 14.6** The acceptance of the equipment by the owner's Engineer in Charge of work shall in no way relieve the Contractor of his obligation under this clause.
- 14.7** In the case of those defective parts, which are not repairable at site but are essential for the commercial operation of the equipment, the Contractor and the Owner's Engineer in Charge of work shall mutually agree to a programme of replacement or renewal, which shall minimize interruption to the maximum extent in the operation of the equipment.
- The defective parts / components / works are to be made good by the contractor without any linkage to his reimbursement from under writers. Irrespective of the claims settled by the writers, the above parts / components / works shall be done / made good whatsoever.
- 14.8** At the end of the guarantee period, the Contractor's liability ceases except for latent defects. For latent defects, the Contractor's liability as mentioned in **clause nos. 14.1 through 14.7 above** shall remain till the end of 5 years from the date of commissioning.
- In respect of goods supplied by sub-contractors to the Contractor, where a longer guarantee (more than 12 months) is provided by such sub-contractor, TSECL shall be entitled to the benefits of such longer guarantee.
- 14.9** The provisions contained in this clause shall not be applicable:

- a. If TSECL has not used the equipment according to the generally approved industrial practice and in accordance with the conditions of operations specified and in accordance with operating manuals, if any.
- b. In cases of normal wear and tear of the parts to be specifically mentioned by the Contractor in the offer.

15.0 TAXES, PERMITS & LICENCES

The Contractor shall be liable and pay all non-Indian taxes, duties, levies lawfully assessed against TSECL or the Contractor in pursuance of the Contract. In addition, the Contractor shall be responsible for payment of all Indian duties, levies and taxes lawfully assessed against this contract.

16.0 REPLACEMENT OF DEFECTIVE PARTS AND MATERIALS

16.1 If during the performance of the Contract, owner's Engineer in charge of the work shall decide and inform in writing to the Contractor that the Contractor has manufactured any equipment, material or part of equipment unsound and imperfect or has furnished any equipment inferior to the quality specified, the Contractor on receiving details of such defects or deficiencies shall at his own expense within seven (7) days of his receiving the notice, or otherwise, within such time as may be reasonably necessary for making it good, proceed to alter, reconstruct or remove such works and furnish fresh equipment/materials up to the standards of the specifications. In case, the Contractor fails to do so, the Owner's Engineer in charge of the work may on giving the Contractor seven (7) days notice in writing of his intentions to do so, proceed to remove the portion of the works so complained of and at the cost of the Contractor perform all such work or furnish all such equipment / materials.

16.2 The Contractor's full and extreme liability under this clause shall be satisfied by the payment to TSECL of the extra cost, of such replacement procured including erection as provided for in the Contract, such extra cost being the ascertained difference between the price paid by TSECL for such replacements and the Contract Price by portion for such defective equipment / materials / works and repayments of any sum paid by TSECL to the Contractor in respect of such defective equipment / material. Should TSECL not so replace the defective equipment / materials, the Contractor's extreme liability under this clause shall be limited to repayment of all sums paid by TSECL under the Contract for such defective equipment / materials.

17.0 PATENT RIGHTS AND ROYALTIES

Royalties and fees for patents covering materials, articles, apparatus, devices, equipment or processes used in the works shall be deemed to have been included in the Contract Price. The Contractor shall satisfy all demands that may be made at any time for such royalties or fees and he alone shall be liable for any damages or claims for patent infringements and shall keep TSECL indemnified in that regard. The Contractor shall, at his own cost and expense, defend all suits or proceedings that may be instituted for alleged infringement of any patents involved in the Works, and, in case of an award of damages, the Contractor shall pay for such award. In the event of any suit or other proceedings instituted against TSECL, the same shall be defended at the cost and expense of the Contractor who shall also satisfy/comply with any decree, order or award made against TSECL. But it shall be understood that no such machine, plant, work, material or thing has been used by TSECL for any purpose or any manner other than that for which they have been furnished and installed by the Contractor and specified under these specifications. Final payment to the Contractor by TSECL shall not be made while

any such suit or claim remains unsettled. In the event any apparatus or equipment, or any part thereof furnished by the Contractor, is in such suit or proceedings held to constitute infringement, and its use is enjoined, the Contractor shall at his option and at his own expense, either procure for TSECL, the right to continue the use of said apparatus, equipment or part thereof, replace it with non-infringing apparatus or equipment or modify it, so it becomes non-infringing.

18.0 DEFENCE OF SUITS

If any action in court is brought against TSECL for the failure, omission or neglect on the part of the Contractor to perform any acts, matters, or things under the Contract, or for damage or injury caused by the alleged omission or negligence on the part of the Contractor, his agents, representatives or his Sub-Contractors, or in connection with any claim based on lawful demands of Sub-Contractors, workmen, suppliers or employees, the Contractor shall in all such cases indemnify and keep TSECL, from all losses, damages, expenses or decrees arising of such action.

19.0 LIMITATION OF LIABILITIES

Limitation of liabilities shall remain in force up to guarantee / warrantee period as specified. Bank Guarantee (BG) shall only be released from TSECL after expiry of the guarantee / warrantee period.

20.0 POWER TO VARY OR OMIT WORK

20.1 No alterations, amendments, omissions, suspensions or variations of the Works (hereinafter referred to as 'variation') under the Contract as detailed in the Contract Documents, shall be made by the Contractor except as directed in writing by owner's Engineer in charge of the work, but he shall have full powers subject to the provisions hereinafter contained, from time to time during the execution of the Contract, by notice in writing to instruct the Contractor to make such variation without prejudice to the Contract. The Contractor shall carry out such variation and be bound by the same conditions as far as applicable as though the said variations occurred in the Contract Documents. If any suggested variations would, in the opinion of the Contractor, if carried out, prevent him from fulfilling any of his obligations or guarantees under the Contract, he shall notify the owner's Engineer in charge of the work thereof in writing and the owner's Engineer in charge of the work shall decide forthwith whether or not, the same shall be carried out and if the owner confirm his instructions, the Contractor's obligations and guarantees shall be modified to such an extent as may be mutually agreed. Any agreed difference in cost occasioned by any such variation shall be added to or deduced from the Contract Price as the case may be.

20.2 In the event of the owner requiring any variation, a reasonable and proper notice shall be given to the Contractor to enable him to work his arrangement accordingly, and in cases where goods or materials are already prepared or any design, drawings or pattern made or work done requires to be altered, a reasonable and agreed sum in respect thereof shall be paid to the Contractor.

20.3 In any case in which the Contractor has received instructions from the owner's Engineer in charge of the work as to the requirement of carrying out the alterations or additional or substituted work which either then or later on, shall in the opinion of the Contractor, involve a claim for additional payment, the Contractor shall immediately and in no case later than thirty (30) days, after receipt of the instructions aforesaid and before carrying out the instructions, advise the Owner's Engineer in charge of the work to that effect. But the Owner's Engineer in charge of the work shall not become liable for the payment of any

charges in respect of any such variations, unless the instructions for the performance of the same shall be confirmed in writing by the owner's Engineer in charge of the work.

20.4 If any variation in the Works results in reduction of Contract Price, the parties shall agree, in writing, to the extent of any change in the price, before the Contractor proceeds with the change.

20.5 In all the above cases, in the event of a disagreement as to the reasonableness of the said sum, the decision of owner's Engineer in charge of the work shall prevail.

20.6 Notwithstanding anything stated above in this clause, owner's Engineer in charge of the work shall have the full power to instruct the Contractor, in writing, during the execution of the Contract to vary the quantities of the items or groups of items in accordance with the provisions of clause entitled 'Change of Quantity in Section – III'. The Contractor shall carry out such variations and be bound by the same conditions as though the said variations occurred in the Contract Documents.

21.0 ASSIGNMENT AND SUB-LETTING OF CONTRACT

21.1 The Contractor may, after informing owner's Engineer in charge of the work and getting his written approval, assign or sub-let the Contract or any part thereof other than supply of main equipments and any part of the plant for which makes are identified in the Contract. Suppliers of the equipment not identified in the Contract or any change in the identified suppliers shall be subjected to approval by the owner's Engineer in charge of the work. The experience list of equipment vendors under consideration by the Contractor for this Contract shall be furnished to the owner's Engineer in charge of the work for approval, prior to procurement of all such items / equipment. Such assignment / sub-letting shall not relieve the Contractor of any obligation, duty or responsibility under the Contract. Any assignment as above, without prior written approval of the owner's Engineer in charge of the work, shall be void.

21.2 For components / equipment procured by the Contractor for the purposes of the Contract, after obtaining the written approval of TSECL, the Contractor's purchase specifications and enquiries shall call for quality plan to be submitted by the suppliers along with their proposals. The quality plans called for from the Vendors shall set out, during the various stages of manufacture and installation, the quality practices and procedures followed by the Vendors quality control organization, the relevant reference document / standard used, acceptance level, inspection documentation raised, etc. Such quality plans of the successful vendors shall be discussed and finalized in consultation with the owner's Engineer in charge of the work and shall form part of the purchase order/contract between the Contractor and the Vendor. Within three weeks of the release of the purchase orders / contracts for such bought out items / components, a copy of the same without price details but together with detailed purchase specifications, quality plans and delivery conditions shall be furnished to the owner's Engineer in charge of the work by the Contractor.

22.0 CHANGE OF QUANTITY

22.1 During the execution of the Contract, TSECL reserves the right to increase or decrease the quantities of items under the Contract but without any change in unit price or other terms & conditions. Such variations shall not be subjected to any limitation for the individual items but the total variations in all such items including items not covered under the Contract shall be limited to **±25%**.

22.2 The base unit rates, as identified in the Contract shall however remain constant during the currency of the contract. In case, the unit rates are not available in the contract, the same shall be worked out as below: -

- i) If the rates for the additional, altered or substituted work are specified in the contract, the contractor is bound to carry the additional, altered or substituted work at the same rates as are specified in the contract.
- ii) If the rates for the additional, altered or substituted work are not specifically provided in the contract, the rates will be derived from a similar class of work as are specified in the contract.
- iii) If the rates for the additional, altered or substituted work includes any work for which no rate is specified in the contract / can not be derived from the similar class of work in the contract, then such work shall be carried out at the rates which will be determined on the basis of current schedule of rate of TSECL above minus / plus the percentage which the total contract amount bears to the estimated cost put to tender. Provided always if the rate for particular part or parts of the item is not available in the schedule of rates the rate of such part or parts will be determined by TSECL of the work on the basis of the prevailing market rate when the work was done.
- iv) If the rates for the additional, altered or substituted work can not be determined in the manner specified in sub-clause i, ii & iii above, then the contractor shall within 7 (seven) days of receipt of order to carry out the order, inform the owner's Engineer in charge of the work of rate which it is his intention to charge for such class of work, supported by analysis of rate or rates claimed, and TSECL shall determine the rate or rates claimed with mutual settlement with the contractor.
- v) The deviation limit referred to above is the net effect (algebraically sum) of all additions and deductions ordered.
- vi) Time for the completion of the work shall be extended in the proportion that the altered, additional or substituted work bears to the original contract of the work and the certificate of the owner's Engineer in charge of the work shall be conclusive for approval of the time extension by TSECL.
- vii) The contractor shall submit to owner's Engineer-in-charge of the work the time extension application as per proforma attached at **Annexure – III**.

23.0 PACKING, FORWARDING AND SHIPMENT

23.1 The Contractor, wherever applicable, shall after proper painting, pack and crate all equipment in such a manner as to protect them from deterioration and damage during rail and road transportation to the site and storage at the site till the time of erection. The Contractor shall be held responsible for all damages due to improper package.

23.2 The Contractor shall notify the owner's Engineer in charge of the work of the date of each shipment from his works, and the expected date of arrival at the site.

23.3 The Contractor shall also give all shipping information concerning the weight, size and content of each packing including any other information the owner's Engineer in charge of the work may require.

23.4 The Contractor shall prepare detailed packing list of all packages and containers, bundles and loose materials forming each and every consignment dispatch to Site.

The Contractor shall further be responsible for making all necessary arrangements for loading, unloading and other handling, right from his works up to the Site and also till the

equipment is erected, tested and commissioned. He shall be solely responsible for proper storage and safe custody of all equipment.

24.0 CO-OPERATION WITH OTHER CONTRACTORS AND CONSULTING ENGINEERS

The Contractor shall agree to cooperate with the TSECL's Consulting Engineers and freely exchange with them such technical information, as is necessary to obtain the most efficient and economical design and to avoid unnecessary duplication of efforts. The owner's Engineer in charge of the work shall be provided with three copies of all correspondence addressed by the Contractor to the consulting Engineers of TSECL in respect of such exchange of technical information.

25.0 NO WAIVER OF RIGHTS

Neither the inspection by TSECL nor any order by TSECL for payment of money or any payment for or acceptance of, the whole or any part of the Works by the owner's Engineer in charge of the work, nor any extension of time, nor any possession taken by the owner's Engineer in charge of the work shall operate as a waiver of any provision of the Contract, or of any power herein reserved to TSECL or any right to damages herein provided nor shall any waiver of any breach in the Contract be held to be a waiver of any other or subsequent breach.

26.0 CERTIFICATE NOT TO AFFECT RIGHT OF TSECL AND LIABILITY OF CONTRACTOR

No interim payment certificate of the owner's Engineer in charge of the work, nor any sum paid on account by TSECL, nor any extension of time for execution of the Works granted by TSECL shall affect or prejudice the rights of TSECL against the Contractor or relieve the Contractor of his obligation for the due performance of the Contractor, or be interpreted as approval of the Works done or of the equipment furnished and no certificate shall create liability for TSECL to pay for alterations, amendments, variations or additional works not ordered, in writing, by the owner's Engineer in charge of the work or discharge the liability of the Contractor for the payment of damages whether due, ascertained or certified or not or any sum against the payment of which he is bound to indemnify TSECL, nor shall any such certificate nor the acceptance by him of any sum paid on account or otherwise affect or prejudice the rights of TSECL against the Contractor.

27.0 INSPECTION AND TESTING OF EQUIPMENTS & MATERIALS

27.1 All equipments / materials shall be dispatched by the contractor only after issuance of Materials Inspection Clearance Certificate (MICC) by the inspecting officer / team of TSECL unless otherwise waived by TSECL during execution of the contract in special circumstances.

27.2 After manufacturing or at the stage of dispatch of equipments / materials the contractor shall give intimation to the owner's Engineer in charge of the work for conducting inspection of equipments / materials at manufacture's works or at recognized testing laboratories to be arranged by the contractor. **The intimation shall be made at least 15 (fifteen) days before the equipments / materials become ready for dispatch.**

27.3 Testing of equipments / materials as specified above shall be conducted at the **risk and cost** of the contractor. **The contractor shall also bear the to and fro traveling, food and lodging charges of the inspecting officer / team of TSECL.**

28.0 TRAINING OF OWNER'S PERSONNEL

28.1 The Contractor shall undertake to train free of cost, two engineering personnel selected and sent by TSECL at the works of the manufacturer. The period and nature of training for

the personnel shall be agreed upon mutually between the Contractor and TSECL. These engineering personnel shall be given special training in the shops, where the equipment shall be manufactured and / or in their Collaborator's works and where possible, in any other plant where equipment manufactured by the Contractor or his Collaborator is under installation, operation, or testing to enable those personnel to become familiar with the equipment being supplied by the Contractor.

28.2 All traveling and living expenses for the engineering personnel to be trained during the total period of training shall be borne by the Contractor. These engineering personnel, while undergoing training, shall be responsible to the Contractor for discipline.

28.3 TSECL shall not be entitled for any rebate, whatsoever on any account in the event of his failing to avail of the training facilities, for any reason.

29.0 PROGRESS REPORTS AND PHOTOGRAPHS

During the various stages of the Work in the pursuance of the Contract, the Contractor shall at his own cost submit periodic progress reports as may be reasonably required by the owner's Engineer in charge of the work with such materials as, charts, Bar Charts, photographs, test certificates, etc.

Such progress reports shall be in the form and size as may be required by the owner's Engineer in charge of the work and shall be submitted in at least three (3) copies.

30.0 TAKING OVER

Upon successful completion of all the tests to be performed at Site on equipment furnished and erected by the Contractor, the owner's Engineer in charge of the work shall issue to the Contractor a **Taking over Certificate** as a proof of the final acceptance of the equipment. Such certificate shall not unreasonably be withheld.

CONTRACT SECURITY AND PAYMENTS

31.0 CONTRACT PERFORMANCE GUARANTEE

The Contractor shall furnish contract performance guarantee as specified in **clause 8.0 of Section – I** for the proper fulfillment of the Contract within fifteen (15) days of "Notice of Award of Contract."

32.0 PAYMENT

32.1 The payment to the Contractor for the performance of the Works under the Contract will be made by TSECL as per the guidelines and conditions specified herein. All payment made during the Contract shall be on account payments only. The final payment will be made on completion of all Works and on completion of warranty / guaranty period including fulfillment by the Contractor of all his liabilities under the Contract.

32.2 Currency of Payment

All payments under the Contract shall be in Indian Rupees only.

32.3 Due Dates for Payments

TSECL will make progressive payment as and when the payment is due as per the terms of payment set forth as herein after.

33.0 Mode of Payment

Payment due on supply / erection of Equipment & materials / services shall be made by the owner's Engineer in charge of the work through account payee Banker cheque.

33.1 TERMS OF PAYMENT

The terms of payments for various activities under the contract are as follows:

33.1.1 Minimum bill value in a single R/A bill shall not be less than 5% of the contract value.

33.1.2 Price of Supply and Erection:

The terms of payments for price of all equipment / materials and erection are detailed herein after.

A) For supply of Equipment / materials:

- i) 80% of the cost of equipment / materials after fulfillment of the following requirements:
 - a. Acknowledgement of Letter of Award.
 - b. Submission of contract performance guarantee as per **clause 8.0 (Section – I)**.
 - c. Submission of a detailed Bar Chart based on the work schedule stipulated in the Bid document and its approval by TSECL.
 - d. Signing of contract agreement.
 - e. On production of dispatch documents including the material inspection clearance certificate (MICC) issued by the inspecting officer / team of TSECL.
 - f. On receipt of materials at site.
- ii) 10% of the cost of equipment / materials after successful erection at site.
- iii) Balance 10% of the cost of equipment / materials after successful commissioning.

B) For the Erection Component and Civil Works:

- i) 90% of the cost of erection & civil works after:
 - a. On establishing his office at site preparatory to mobilization of his erection establishment including posting of site engineer.
 - b. On successful erection of equipments / materials as per lay-out drawing submitted by the bidder and approved by TSECL.
- ii) Balance 10% of the cost of erection & civil works after successful commissioning.

33.1.3 All further payments under the Contract shall be made as stipulated in the Contract document after signing the Contract Agreement.

33.1.4 Inland Transportation & Insurance

Inland transportation (including port handling) and inland insurance charges shall be borne by the contractor and TSECL in no way shall be liable for the inland transportation and insurance charges.

33.1.5 Spares

The Ex-works price components including packing and forwarding charges of spares shall be paid as indicated below: -

- a. On receipt and storage at Site and on physical verification by the owner's Engineer in charge of the work.

33.1.6 DEDUCTION FROM CONTRACT PRICE

All costs, damages or expenses which TSECL may have paid, for which under the Contract, the Contractor is liable, will be deducted from the progressive bill of the contractor.

34.0 SPARES

34.1 All the spares for the equipment under the Contract will, strictly, conform to the specification and documents and will be identical to the corresponding main equipment / components supplied under the Contract and shall be fully interchangeable.

34.2 All the mandatory spares covered under the Contract shall be produced along with the main equipment as a continuous operation and the delivery of the spares will be affected along with the main equipment in a phased manner and the delivery would be completed by the respective dates for the various categories of equipment as per the agreed Bar chart. In case of recommended spares, the above will be applicable provided the order for the recommended spares has been placed with the Contractor prior to commencement of manufacture of the main equipment.

34.3 The quality plan and the inspection requirement finalized for the main equipment will also be applicable for the corresponding spares.

34.4 The Contractor will provide TSECL with the manufacturing drawings, catalogues, assembly drawings and any other documents required by TSECL so as to enable the Owner to identify the recommended spares. Such details will be furnished to TSECL as soon as they are prepared but in any case not later than six months prior to commencement of manufacture of the corresponding main equipment.

34.5 The Contractor will provide TSECL with all the addresses and particulars of his sub-suppliers while placing the order on vendors for items / components / equipment covered under the Contract and will further ensure with his vendors that TSECL, if so desires, will have the right to place order(s) for spares directly on them on mutually agreed terms based on offers of such vendors.

35.0 WARRANTEE FOR SPARES

The Contractor shall warrant that all spares supplied will be new and in accordance with Contract Documents and will be free from defects in design, materials and workmanship and shall further guarantee as under:

35.1 For 3 years operational spares (both mandatory and recommended)

- a. For any item of spares ordered or to be ordered by TSECL for 3 years operational requirement of the plant which is manufactured as a continuous operation together with the corresponding main equipment/component, the warranty will be 12 months from the scheduled date of commercial operation of the last unit of main equipment under the Contract. In case of any failure in the original component/equipment due to faulty designs, materials and workmanship, the corresponding spare parts, if any, supplied will be replaced without any extra cost to TSECL unless a joint

examination and analysis by TSECL and the Contractor of such spare parts prove that the defect found in the original part that failed, can safely be assumed not to be present in spare parts. Such replaced spare parts will have the same warranty as applicable to the replacement made for the defective original part/ component provided that such replacement for the original equipment and the spare replaced are again manufactured together. The discarded spare parts will become the property of the Contractor as soon as they have been replaced by the Contractor.

- b. For the item of spares ordered / to be ordered by TSECL for 3 years operational requirement of the equipment, which with the written approval of the Owner, are not manufactured as a continuous operation together with the manufacture of the corresponding main equipment / component, will be warranted for 6000 hrs of trouble free operation, if used within a period of 18 months (reckoned from the date of delivery at Site). However, if such spare parts are put to use after 18 months of the delivery at site then the guarantee of such spares will stand valid till the expiry of 36 months from the scheduled date of the completion of commissioning of the last unit of equipment or 6000 hrs of trouble free operation after such spares are put in service, whichever is earlier.
- c. For long Term Requirement.

For items of spares that may be ordered by TSECL to cover requirements beyond 3 years of initial operation of the plant, the warranty will be till the expiry of 6000 hrs. of trouble free operation if used within a period of 18 months from the date of delivery at Site. For items of spares that may be used after 18 months from the date of delivery at Site, the warranty period will be 12 months from the date they are put to use or 6000 hrs of trouble free operation, whichever is earlier.

35.2 The warranty of spares that are not used within 18 months from the respective dates of the delivery at Site covered in Para (b) & (c) above will, however, be subject to the condition that all such spares have been stored / maintained / preserved in accordance with Contractor's standard recommended practice, if any, and the same have been furnished to TSECL.

35.3 To enable TSECL to finalize the requirement of recommended spares which are ordered subsequent to placement of order for main equipment in addition to necessary technical details, catalogue and such other information brought-out here-in-above, the Contractor will also provide a justification in support of reasonableness of the quoted prices of spares which will, inter-alia, include documentary evidence that the prices quoted by the Contractor are not higher than those charged by them from other customers in the same period.

35.4 In addition to the spares recommended by the Contractor, if TSECL further identifies certain particular items of spares, the Contractor will submit the prices and delivery quotations for such spares within 30 days of receipt of such request with validity period for 6 months for consideration of placement of order for additional spares, if TSECL so desires.

35.5 The Contractor shall guarantee the long-term availability of spares to TSECL for the full life of the equipment covered under the Contract. The Contractor shall guarantee that before going out of production of spare parts of the equipment, he shall give at least twelve (12) months advance notice so that the latter may order his bulk requirement of spares, if he so desires. The same provision will also be applicable to Sub-Contractor of any spares by the Contractor or his Sub-Contractors. Further, in case

of discontinuance of manufacture of any spares by the Contractor or his Sub-Contractors, the Contractor will provide TSECL, two years in advance, full manufacturing drawings, material specifications and technical information required by TSECL for the purpose of manufacture of such items.

- 35.6** Further in case of discontinuance of supply of spares by the Contractor or his Sub-contractors, the Contractor will provide TSECL with full information for replacement of such spares with other equivalent makes, if so required by TSECL.
- 35.7** The prices of all future requirements of items of spares beyond 3 years operational requirement will be derived from the corresponding ex-works price at which the order for such spares have been placed by TSECL as part of mandatory spares or recommended spares. Ex-works order price of future spares shall be computed in accordance with the price adjustment provisions covered under the main Contract excepting that 'the base indices will be counted from the scheduled date of successful completion of trial operation of the last equipment under the main project and there will be no ceiling on the amount of narration in the prices. The above option for procuring future long term requirement of spares by TSECL shall remain valid for a period of 5 years from successful completion of commissioning of the last unit of equipment.
- 35.8** The Contractor will indicate in advance the delivery period of the items of spares, which TSECL may procure in accordance with above Sub-clause. In case of emergency requirements of spares, the Contractor would make every effort to expedite the manufacture and delivery of such spares on the basis of mutually agreed time schedule.
- 35.9** In case the Contractor fails to supply the mandatory, recommended or long term spares in accordance with the terms stipulated above, TSECL shall be entitled to purchase the same from alternate sources at the risk and the cost of the Contractor and recover from the Contractor, the excess amount paid by TSECL over the rates worked out on the above basis. In the event of such risk purchase by TSECL, the purchases will be as per the works and procurement policy of TSECL prevalent at the time of such purchases and at his option, may include a representative of the Contractor in finalizing the purchases.
- 35.10** It is expressly understood that the final settlement between the parties in terms of the relevant clauses of the Bidding Documents shall not relieve the Contractor of any his obligations under the provision of long term availability of spares unless otherwise discharged in writing by TSECL.

36.0 TRANSFER OF THE TITLE

- 36.1** This Transfer of Title of equipments / materials shall not be constructed to mean the acceptance and the consequent "Taking Over" of equipment and materials. The Contractor shall continue to be responsible for the quality and performance of such equipment and materials and for their compliance with the specifications until "Taking Over" and the fulfillment of guarantee provisions of this Contract.
- 36.2** This Transfer of Title shall not relieve the Contractor from the responsibility for all risks of loss or damage to the equipment and materials as specified under the clause entitled "Insurance" of this Section.

37.0 INSURANCE

- 37.1** The Contractor at his cost shall arrange, secure and maintain all insurance as may be pertinent to the Works and obligatory in terms of law to protect his interest and interests of TSECL against all perils detailed herein. The form and the limit of such insurance as defined herein together with the under-writer in each case shall be acceptable to TSECL.

However, irrespective of such acceptance, the responsibility to maintain adequate insurance coverage at all times during the period of Contract shall be of the Contractor alone. The Contractor's failure in this regard shall not relieve him of any of his contractual responsibilities and obligations. The insurance covers to be taken by the Contractor shall be in a joint name of TSECL and the Contractor. The Contractor shall, however, be authorized to deal directly with Insurance Company or Companies and shall be responsible in regard to maintenance of all insurance covers. Further the insurance should be in freely convertible currency.

37.2 Any loss or damage to the equipment during handling, transportation, storage, erection, putting into satisfactory operation and all activities to be performed till the successful completion of commissioning of the equipment shall be to the account of the Contractor. The Contractor shall be responsible for preference of all claims and make good the damages or loss by way of repairs and/or replacement of the equipment, damaged or lost. The transfer of title shall not in any way relieve the Contractor of the above responsibilities during the period of Contract. The Contractor shall provide TSECL with copy of all insurance policies and documents taken out by him in pursuance of the Contract. Such copies of documents shall be submitted to TSECL immediately after such insurance coverage. The Contractor shall also inform TSECL in writing at least sixty (60) Days in advance regarding the expiry / cancellation and / or change in any of such documents and ensure revalidation, renewal etc., as may be necessary well in time.

37.3 The perils required to be covered under the insurance shall include, but not be limited to fire and allied risks, miscellaneous accidents (erection risks) workman compensation risks, loss or damage in transit, theft, pilferage, riot, strikes, social unrest and malicious damages, civil commotion, weather conditions, accidents of all kinds, etc. The scope of such insurance shall be adequate to cover the replacement / reinstatement cost of the equipment for all risks up to and including delivery of goods and other costs till the equipment is delivered at Site. The insurance policies to be taken should be on replacement value basis and / or incorporating escalation clause. Notwithstanding the extent of insurance cover and the amount of claim available from the underwriters, the Contractor shall be liable to make good the full replacement / rectification value of all equipment / materials and to ensure their availability as per project requirements.

37.4 All costs on account of insurance liabilities covered under the Contract will be to Contractor's account and will be included in Contract Price, However, TSECL may from time to time, during the pendency of the Contract, ask the Contractor in writing to limit the insurance coverage, risks and in such a case, the parties to the Contract will agree for a mutual settlement, for reduction in Contract price to the extent of reduced premium amount. The Contractor, while arranging the insurance shall ensure to obtain all discounts on premium, which may be available for higher volume or for reason of financing arrangement of the project.

37.5 The clause entitled 'Insurance' under the Section – IV, covers the additional insurance requirements for the portion of the works to be performed at the Site.

38.0 LIABILITY FOR ACCIDENTS AND DAMAGES

Under the Contract, the Contractor shall be responsible for loss or damage to the equipment until the successful completion of commissioning as defined else-where in the Bidding Documents.

38.1 DELAYS BY TSECL OR HIS AUTHORISED AGENTS

In case the Contractor's performance is delayed due to any act on the part of TSECL or his authorized agents, then the Contractor shall be given due extension of time for the completion of the Works, to the extent of such act on the part of TSECL has caused delay in the Contractor's performance of the Contract.

Regarding reasonableness or otherwise of the extension of time, the decision of the TSECL shall be final.

39.0 DEMURRAGE, WHARFAGE, ETC.

All demurrage, wharf-age and other expenses incurred due to delayed clearance of the material or any other reason shall be to the account of the Contractor.

40.0 FORCE MAJEURE

40.1 Force majeure is herein defined as any cause which is beyond the control of the Contractor or TSECL as the case may be, which they could not foresee or with a reasonable amount of diligence could not have foreseen and which substantially affects the performance of the Contract, such as:

- a. Natural phenomena, including but not limited to floods, droughts, earthquakes and epidemics;
- b. Acts of any Government including but not limited to war, declared or undeclared, quarantines, and embargoes.

Provided the contractor shall within fifteen (15) days from the occurrence of such a cause notify TSECL in writing of such causes, acceptance of which will be given by TSECL after verification.

40.2 The Contractor or TSECL shall not be liable for delays in performing his obligations resulting from any force-majeure cause as referred to and /or defined above.

The date of completion will, subject to hereinafter provided, be extended by a reasonable time. In such case the contractor shall submit to owner's Engineer-in-charge of the work the time extension application as per proforma attached at **Annexure – III**.

41.0 SUSPENSION OF WORK

41.1 TSECL reserves the right to suspend and reinstate execution of the whole or any part of the Works without invalidating the provisions of the Contract. Orders for Suspension or reinstatement of the Works will be issued by TSECL to the Contractor in writing. The time for completion of the works will be extended for a period equal duration of the suspension.

42.0 CONTRACTOR'S DEFAULT

42.1 If the Contractor shall neglect to execute the Works with due diligence and expertise or shall refuse or neglect to comply with any reasonable order given to him, in the Contract by the owner's Engineer in charge of the work in connection with the works or shall contravene the provisions of the Contract, TSECL may give notice in writing to the Contractor to make good the failure, neglect or contravention complained of. Should the Contractor fail to comply with the notice within thirty (30) days from the date of serving the notice, then and in such case TSECL shall be at liberty to employ other workmen and forthwith execute such part of the Works as the Contractor, may have neglected to do or if TSECL shall think fit, without prejudice to any other right he may have under the Contract to take the work wholly or in part out of the Contractor's hands and re-contract with any other person or persons to complete the works or any part thereof and in that

event TSECL shall have free use of all Contractor's equipment that may have been at the time on the Site in connection with the works without being responsible to the Contractor for fair wear and tear thereof and to the exclusion of any right of the Contractor over the same, and TSECL shall be entitled to retain and apply any balance which may otherwise be due on the Contract by him to the Contractor, or such part thereof as may be necessary, to the payment of the cost of executing the said part of the Work or of completing the Works as the case may be. If the cost of completing of Works or executing a part thereof as aforesaid shall exceed the balance due to the Contractor, the Contractor shall pay such excess. Such payment of excess amount shall be independent of the liquidated damages for delay, which the Contractor shall have to pay if the completion of Works is delayed.

42.2 In addition, such action by TSECL as aforesaid shall not relieve the Contractor of his liability to pay liquidated damages for delay in completion of Works as defined in **clause 13.0 of this Section**.

Such action by TSECL as aforesaid, the termination of the Contract under this clause shall neither entitle the Contractor to reduce the value of the Contract Performance Guarantee nor the time thereof. The Contract Performance Guarantee shall be valid for the full value and for the full period of the Contract including guarantee period.

43.0 TERMINATION OF CONTRACT ON OWNER'S INITIATIVE

43.1 TSECL reserves the right to terminate the Contract either in part or in full due to reasons stipulated in the clause entitled "Contractor's Default." TSECL shall in such an event give fifteen (15) days notice in writing to the Contractor of his decision to do so.

43.2 The contractor upon receipt of such notice shall discontinue the work on the date and to the extent specified in the notice.

43.3 If the contractor is an individual or a proprietary concern and the individual or the proprietor dies and if the Contractor is a partnership concern and one of the partners dies then unless TSECL is satisfied that the legal representatives of the individual contractor or of the proprietor of proprietary concern and in the case of partnership, the surviving partners, are capable of carrying out and completing the Contract, TSECL shall be entitled to cancel the Contract as to its uncompleted part without being in any way liable to payment of any compensation to the estate of deceased Contractor and/or to the surviving partners of the Contractor's firm on account of the cancellation of the Contract. The decision of TSECL that the legal representatives of the deceased Contractor or surviving partners of the Contractor's firm cannot carry out and complete the Contract shall be final and binding on the parties.

RESOLUTION OF DISPUTES

44.0 SETTLEMENT OF DISPUTES

44.1 Any dispute(s) or difference (s) arising out of or in connection with the Contract shall, to the extent possible, be settled amicably between the parties.

44.2 If any dispute or difference of any kind whatsoever shall arise between the owner's Engineer in charge of the work and the Contractor, arising out of the Contract for the performance of the Works whether during the progress of the Works or after its completion or whether before or after the termination, abandonment or breach of the Contract, it shall, in the first place, be referred to and settled by the Additional General Manager of the concerned circle / General Manager as the case may be, who, within a

period of thirty (30) days after being requested by either party to do so, shall give written notice of his decision to both the parties.

44.3 In the event the Contractor being dissatisfied with any such decision, the matters in dispute shall be referred to arbitration as hereinafter provided.

45.0 ARBITRATION

45.1 All disputes or differences in respect of which the decision, if any, of the Engineer has not become final or binding as aforesaid shall be settled by arbitration in the manner hereinafter provided.

45.1.1 The demand for arbitration shall be made within a reasonable time after the claim, dispute or other matter in question has arisen, and in no event shall it be made after 90 (ninety) days from when the aggrieved party knew or should have known of the controversy, claim, dispute or breach.

45.1.2 The arbitration shall be conducted by an arbitrator, to be nominated by TSECL and he will be the sole arbitrator to conduct the arbitration.

45.1.3 The arbitration shall be conducted in accordance with the provisions of the Indian Arbitration & Reconciliation Act, 1996 or any statutory modification thereof. The venue of arbitration shall be at Agartala.

45.2 The arbitrators may, from time to time with the consent of all the parties enlarge the time for making the award.

45.3 The arbitrator shall have full powers to review and/or revise any, decision, opinion, direction, certification or valuation of the Engineer in accordance with the Contract, and neither party shall be limited in the proceedings before such arbitrators to the condense or arguments put before the Engineer for the purpose of obtaining the said decision.

45.4 During settlement of disputes and arbitration proceedings, both parties shall be obliged to carry out their respective obligations under the Contract.

46.0 RECONCILIATION OF ACCOUNTS

The Contractor shall prepare and submit every six months, a statement covering payments claimed and the payments received vis-à-vis the works executed, for reconciliation of accounts with the owner's Engineer in charge of the work. The Contractor shall also prepare and submit a detailed account of Materials received from TSECL and utilized by him for reconciliation purpose.

SECTION – IV

ERECTION CONDITIONS OF CONTRACT

1.0 GENERAL

- 1.1** The following shall supplement the conditions already contained in the other parts of these specifications and document and shall govern the portion of the work of this Contract to be performed at Site.
- 1.2** The Contractor upon signing of the Contract shall, in addition to a Project Coordinator, nominate another responsible officer as his representative at Site suitably designated for the purpose of overall responsibility and co-ordination of the works to be performed at Site. Such person shall function from the Site Office of the Contractor.

2.0 REGULATION OF LOCAL AUTHORITIES

- 2.1** The Contractor shall comply with all the rules and regulations of local authorities during the performance of his field activities. He shall also comply with the Minimum Wages Act, 1948 and the Payment of Wages Act (both of the Government of India) and the rules made there-under in respect of any employee or workman employed or engaged by him or his Sub-Contractor.
- 2.2** All registration and statutory inspection fees, if any, in respect of his work pursuant to this Contract shall be to the account of the Contractor. However, any registration, statutory inspection fees lawfully payable under any statutory laws and its amendments from time to time during erection in respect of the equipment ultimately to be owned by the Owner, shall be to the account of TSECL. Should any such inspection or registration need to be re-arranged due to the fault of the Contractor or his Sub-Contractor, the additional fees to such inspection and / or registration shall be borne by the Contractor.

3.0 OWNER'S LIEN ON EQUIPMENT

TSECL shall have a lien on all equipment including those of the Contractor brought to the Site for the purpose of erection, testing and commissioning of the equipment to be supplied & erected under the Contract. TSECL shall continue to hold the lien on all such equipment throughout the period of Contract. No material brought to the Site shall be removed from the Site by the Contractor and / or his Sub-Contractors without the prior written approval of the Engineer.

4.0 INSPECTION, TESTING AND INSPECTION CERTIFICATES

The provisions of the clause entitled Inspection, Testing and Inspection Certificates under Technical Specification, Section General Terms & Conditions (GTC) shall also be applicable to the erection portion of the Works. The Dy. General Manager in charge of the work shall have the right to re-inspect any equipment though previously inspected at the Contractor's works, before and after the same are erected at Site. If by the above inspection, the Dy. General Manager in charge of the work rejects any equipment, the Contractor shall make good for such rejections either by replacement or modification / repairs as may be necessary to the satisfaction of TSECL. Such replacements shall also include the replacements or re-execution of such of those works of other Contractors and / or agencies, which might have got damaged or affected by the replacements or re-work done to the Contractor's work.

5.0 ACCESS TO SITE AND WORKS ON SITE

5.1 Suitable access to the Site shall be afforded to the Contractor by TSECL in reasonable time.

5.2 In the execution of the works, no person other than the Contractor or his duly appointed representative, Sub-Contractor and workmen, shall be allowed to do work on the Site, except by the special permission, in writing of the site Engineer of TSECL or his representative.

6.0 CONTRACTOR'S SITE OFFICE ESTABLISHMENT

The Contractor shall establish a Site Office at the Site and keep posted an authorized representative for the purpose of the Contract. Any written order or instruction of the Dy. General Manager in charge of the work or his duly authorized representative shall be communicated to the said authorized resident representative of the Contractor and the same shall be deemed to have been communicated to the Contractor at his legal address.

7.0 CO-OPERATION WITH OTHER CONTRACTORS

7.1 The Contractor shall co-operate with all other Contractors or tradesmen of TSECL, who may be performing other works on behalf of TSECL and the workmen who may be employed by TSECL and doing work in the vicinity of the Works under the Contract. The Contractor shall also so arrange to perform his work as to minimize, to the maximum extent possible, interference with the work of other Contractors and their workmen. Any injury or damage that may be sustained by the employees of the other Contractors and TSECL, due to the Contractor's work shall promptly be made good at the Contractor's own expense. The site Engineer of TSECL shall determine the resolution of any difference or conflict that may arise between the Contractor and other Contractors or between the Contractor and the workmen of TSECL in regard to their work. If the work of the Contractor is delayed because of any acts of omission of another Contractor, the Contractor shall have no claim against TSECL on that account other than an extension of time for completing his Works.

7.2 The site Engineer of TSECL shall be notified promptly by the Contractor of any defects in the other Contractor's works that could affect the Contractor's Works. The Engineer shall determine the corrective measures if any required rectifying this situation after inspection of the works and such decisions by the Engineer shall be binding on the Contractor.

8.0 DISCIPLINE OF WORKMEN

The Contractor shall adhere to the disciplinary procedure set by the site Engineer of TSECL in respect of his employees and workmen at Site. The Engineer shall be at liberty to object to the presence of any representative or employee of the Contractor at the Site, if in the opinion of the Engineer such employee has misconduct himself or is incompetent or negligent or otherwise undesirable and then the Contractor shall remove such a person objected to and provide in his place a competent replacement.

9.0 CONTRACTOR'S FIELD OPERATION

9.1 The Contractor shall keep the site Engineer of TSECL informed in advance regarding his field activity plans and schedules for carrying-out each part of the works. Any review of such plan or schedule or method of work by the site Engineer of TSECL shall not relieve the Contractor of any of his responsibilities towards the field activities. Such reviews shall also not be considered as an assumption of any risk or liability by TSECL or any of his representatives and no claim of the Contractor shall be entertained because of the failure

or inefficiency of any such plan or schedule or method of work reviewed. The Contractor shall be solely responsible for the safety, adequacy and efficiency of plant and equipment and his erection methods.

- 9.2** The Contractor shall have the complete responsibility for the conditions of the Work-Site including the safety of all persons employed by him or his Sub-Contractor and all the properties under his custody during the performance of the work. This requirement shall apply continuously till the completion of the Contract and shall not be limited to normal working hours. The construction review by the site Engineer of TSECL is not intended to include review of Contractor's safety measures in, on or near the work Site, and their adequacy or otherwise.

10.0 PHOTOGRAPHS AND PROGRESS REPORT

- 10.1** The Contractor shall furnish three (3) prints each to the site Engineer of progress photographs of the work done at Site. Photographs shall be taken as and when indicated by the site Engineer of TSECL or his representative. Photographs shall be adequate in size and number to indicate various stages of erection. Each photograph shall contain the date, the name of the Contractor and the title of the photograph.

- 10.2** The above photographs shall accompany the monthly progress report detailing-out the progress achieved on all erection activities as compared to the schedules. The report shall also indicate the reasons for the variance between the scheduled and actual progress and the action proposed for corrective measures, wherever necessary.

11.0 MAN-POWER REPORT

- 11.1** The Contractor shall submit to the site Engineer of TSECL, on the first day of every month, a man-hour schedule for the month, detailing the man hours scheduled for the month, skill-wise and area-wise including the list of engineers / workers.

- 11.2** The Contractor shall also submit to the site Engineer of TSECL, on the first day of every month, a man power report of the previous month detailing the number of persons scheduled to have been employed and actually employed, skill-wise and the areas of employment of such labour.

12.0 PROTECTION OF WORK

The Contractor shall have total responsibility for protecting his works till it is finally taken over by TSECL. No claim shall be entertained by TSECL for any damage or loss to the Contractor's works and the Contractor shall be responsible for complete restoration of the damaged works to original conditions to comply with the specification and drawings, should any such damage to the Contractor's works occur because of any other party not being under his supervision or control. The Contractor shall make his claim directly with the party concerned. If disagreement or conflict or dispute develops between the Contractor and the other party or parties concerned regarding the responsibility for damage to the contractor's works, the same shall be resolved as per the provisions of the **Clause 7.0 above** entitled "Cooperation with other Contractors". The Contractor shall not cause any delay in the repair of such damaged works because of any delay in the resolution of such dispute. The Contractor shall proceed to repair the Work immediately and no cause thereof will be assigned pending resolution of such disputes.

13.0 EMPLOYMENT OF LABOUR

13.1 The Contractor shall be expected to employ on the work only his regular skilled employees with experience of this particular work. No female labour shall be employed after darkness. No person below the age of eighteen years shall be employed.

13.2 All traveling expenses including provisions of all necessary transport to and from Site, lodging allowances and other payments to the Contractor's employees shall be the sole responsibility of the Contractor.

13.3 The hours of work on the Site shall be decided by the site Engineer of TSECL and the Contractor shall adhere to it. Working hours shall normally be eight (8) hours per day – Monday through Saturday and may have to be extended in the interest of work.

13.4 The Contractor's employees shall wear identification badges while on work at Site.

13.5 In case TSECL becomes liable to pay any wages or dues to the labour or any Government agency under any of the provisions of the Minimum Wages Act, Workmen Compensation Act, Contract Labour Regulation Abolition Act or any other law due to act of omission of the Contractor, TSECL may make such payments and shall recover the same from the Contractor's bills.

14.0 FACILITIES TO BE PROVIDED

By the Contractor

14.1 Tools, tackles and scaffoldings

The Contractor shall provide all the construction equipment, tools, tackles and scaffoldings required for pre-assembly, erection, testing and commissioning of the equipment covered under the Contract. He shall submit a list of all such materials to the site Engineer of TSECL before the commencement of pre-assembly at Site. These tools and tackles shall not be removed from the Site without the written permission of the site Engineer.

14.2 First – aid

The Contractor shall provide necessary first-aid facilities for all his employees, representatives and workmen working at the Site. Enough number of Contractor's personnel shall be trained in administering first – aid.

14.3 Cleanliness

The Contractor shall be responsible for keeping the entire area allotted to him clean and free from rubbish, debris etc. during the period of Contract. The Contractor shall employ enough number of special personnel to thoroughly clean his work-area at least once in a day. All such rubbish and scrap material shall be stacked or disposed in a place to be identified by the site Engineer of TSECL. Materials and stores shall be so arranged to permit easy cleaning of the area. In areas where equipment might drip oil and cause damage to the floor surface, a suitable protective cover of a flame resistant, oil proof sheet shall be provided to protect the floor from such damage.

14.4 Communication

The contractor shall extend the telephone & telex facilities, if available at Site, for the purposes of interaction with the site office by him and TSECL.

By the Owner

14.5 Space

- a) Land for Contractor's Office, Store, and Workshop etc if available shall be provided by TSECL. Otherwise contractor has to arrange at his own cost and responsibilities the accommodation for his site office, store and workshop etc.
- b) The site Engineer of TSECL shall at his discretion and for the duration of execution of the Contract make available at site, land for construction of Contractor's field office, workshop, stores, magazines for explosives in isolated locations, assembling yard, etc. required for execution of the Contract. Any construction of temporary roads, offices, workshop, etc. as approved by the site Engineer of TSECL shall be done by the Contractor at his cost.
- c) On completion of work, the Contractor shall hand over the land duly cleaned to the site Engineer of TSECL. Until and unless the Contractor has handed over the vacant possession of land allotted to him for the above purpose, the payment of his final bill shall not be made. The Contractor shall be made liable to pay for the use and occupation at the rates to be determined by the Engineer if the Contractor over stays in the land after the Contract is completed.

14.6 Electricity – Power Supply

Where power supply is available with TSECL for construction purpose, the same shall be provided at the job at one point of the distribution system as may be decided by site Engineer of TSECL. The charge for extension of service line and energy consumption charges shall be borne by the contractor. In case the contractor fails to pay the related charge of extension of service line and energy consumption within due date of the bill raised for the purpose, the amount will be deducted from the progressive bill of the contractor.

14.7 Water

Free supply of water shall be made available for the construction purpose whenever water is available and the same shall be given at an agreed single point at the Site. Any further distribution shall be the responsibility of the Contractor. Free drinking water if available shall also be provided at one agreed point in the Site. Further distribution either to his labour colony or his work Site or to his office shall be the responsibility of the Contractor.

15.0 LINES AND GRADES

All the works shall be performed on the lines, grades and elevations indicated on the drawings. The Contractor shall be responsible to locate and lay-out the works. Basic horizontal and vertical control points shall be established and marked by the Engineer at Site at suitable points. These points shall be used as datum for the works under the Contract. The Contractor shall inform the site Engineer of TSECL well in advance of the times and places at which he wishes to do work in the area allotted to him so that suitable datum points may be established and checked by the site Engineer to enable the Contractor to proceed with his works. Any work done without being properly located may be removed and / or dismantled at contractor expense.

16.0 FIRE PROTECTION

16.1 The work procedures that are to be used during the erection shall be those which minimize fire hazards to the extent practicable. Combustible materials, combustible waste and rubbish shall be collected and removed from the Site at least once each day. Fuels,

oils and volatile or inflammable materials shall be stored away from the construction and equipment and materials storage areas in safe containers. Un-treated materials shall not at all be used at Site for any other purpose unless otherwise specified. If any such materials are received with the equipment at the Site, the same shall be removed and replaced with acceptable material before moving into the construction or storage area.

16.2 Similarly corrugated paper fabricated cartons etc. shall not be permitted in the construction area either for storage or for handling of materials. All such materials used shall be of water proof and flame resistant type. All the other materials such as working drawings, plans etc. which are combustible but are essential for the works to be executed shall be protected against combustion resulting from welding sparks, cutting flames and other similar fire sources.

16.3 All the Contractor's supervisory personnel and sufficient number of workers shall be trained for fire-fighting and shall be assigned specific fire protection duties. Enough of such trained personnel must be available at the Site during the entire period of the Contract.

16.4 The Contractor shall provide enough fire protection equipment of the types and number for the ware-houses, office, temporary structures, labour colony area etc. Access to such fire protection equipment shall be easy and kept open at all time.

17.0 SECURITY

The Contractor shall have total responsibility for all equipment and materials in his custody / stores, loose, semi-assembled and / or erected by him at Site. The contractor shall make suitable security arrangements including employment of security personnel to ensure the protection of all materials, equipment and works from theft, fire, pilferage and any other damages and loss. All materials of the Contractor shall enter and leave the project Site only with the written permission of site Engineer of TSECL in the prescribed manner.

18.0 CONTRACTOR'S AREA LIMITS

The site Engineer of TSECL shall mark-out the boundary limits of access roads, parking spaces, storage and construction areas for the Contractor and the Contractor shall not trespass the areas not so marked out for him. The Contractor shall be responsible to ensure that none of his personnel move out of the areas marked out for his operations. In case of such a need for the Contractor's personnel to work out of the areas marked out for him, the same shall be done only with the written permission of the site Engineer of TSECL.

19.0 CONTRACTOR'S CO-OPERATION

In case where the performance of the erection work by the Contractor affects the operation of the system facilities of TSECL, such erection work of the Contractor shall be scheduled to be performed only in the manner stipulated by the site Engineer and the same shall be acceptable at all times to the Contractor. The site Engineer may impose such restrictions on the facilities provided to the Contractor such as electricity, water etc. as he may think fit in the interest of TSECL and the Contractor shall strictly adhere to such restrictions and co-operate with the site Engineer of TSECL. It will be the responsibility of the Contractor to provide all necessary temporary instrumentation and other measuring devices required during start-up and operation of the equipment systems which are erected by him. The Contractor shall also be responsible for flushing and initial filling of all the oil and lubricants required for the equipment furnished and erected by him, so as to

make such equipment ready for operation. The Contractor shall be responsible for supplying such flushing oil and other lubricants unless otherwise specified elsewhere in the document and specification.

20.0 MATERIALS HANDLING AND STORAGE

- 20.1** All the equipment furnished under the Contract and arriving at Site shall be promptly received, unloaded, transported and stored in the storage arrange by the contractor at his risk and cost.
- 20.2** The Contractor shall be responsible for examining all the shipment and notify the site Engineer of TSECL immediately of any damage, shortage, discrepancy etc. for the purpose of information only. The Contractor shall submit to the site Engineer of TSECL every week a report detailing all the receipts during the week. However, the Contractor shall be solely responsible for any shortages or damage in transit, handling and/or in storage and erection of the equipment at Site. Any demurrage, wharfage and other such charges claimed by the transporters, railways etc. shall be to the account of the Contractor.
- 20.3** The Contractor shall maintain an accurate and exhaustive record detailing out the list of all equipment received by him for the purpose of erection and keep such record open for the inspection by the site Engineers / higher officials of TSECL.
- 20.4** All equipment shall be handled very carefully to prevent any damage or loss. No bare wire ropes, slings, etc. shall be used for unloading and / or handling of the equipment without the specific written permission of the site Engineer. The equipment stored shall be properly protected to prevent damage either to the equipment or the floor where they are stored. The equipment from the store shall be moved to the actual location at the appropriate time so as to avoid damage of such equipment at Site.
- 20.5** All electrical panels, control gears, motors and such other devices shall be properly dried by heating before they are installed and energized. Motor bearings, slip rings, commutators and other exposed parts shall be protected against moisture ingress and corrosion during storage and periodically inspected.
- 20.6** All the electrical equipment such as motors, generators, etc. shall be tested for insulation resistance at least once in a month from the date of receipt till the date of commissioning and a record of such measured insulation values maintained by the Contractor. Such records shall be made available for inspection by the site Engineers / higher officials of TSECL.
- 20.7** The Contractor shall ensure that all the packing materials and protection devices used for the various equipments during transit and storage are removed before the equipment are installed.
- 20.8** The consumable and other supplies likely to deteriorate due to storage must be thoroughly protected and stored in a suitable manner to prevent damage or deterioration in quality by storage.
- 20.9** All the materials stored in the open or dusty location must be covered with suitable weather- proof and flame proof covering material wherever applicable.
- 20.10** If the materials belonging to the Contractor are stored in areas other than those earmarked for him, the site Engineer shall have the right to get it moved to the area earmarked for the Contractor at the Contractor's cost.

20.11 The Contractor shall be responsible for making suitable indoor storage facilities to store all equipment which require indoor storage. Normally, all the electrical equipment such as motors, control gear, generators, exciters and consumables like electrodes, lubricants etc. shall be stored in the closed storage space. The site Engineer, in addition, may direct the Contractor to move certain other materials, which in his opinion shall require indoor storage, to indoor storage areas, which the Contractor shall strictly comply with.

21.0 CONSTRUCTION MANAGEMENT

21.1 The field activities of the Contractors working at Site shall be coordinated by the site Engineer of TSECL and his decision shall be final in resolving any disputes or conflicts between the Contractor and other Contractors and tradesmen regarding scheduling and co-ordination of work. Such decision by site Engineer of TSECL shall not be a cause for extra compensation or extension of time for the Contractor.

21.2 The site Engineer of TSECL shall hold weekly meeting with the site Engineer / supervisor of the contractor. The site Engineer / supervisor of the contractor shall attend such meetings and take notes of the discussions during the meeting and the decision of the site Engineer of TSECL and shall strictly adhere to those decisions in performing his works. In addition to the above weekly meeting, the site Engineer / higher officials of TSECL may call for other meeting with the site Engineer / supervisor / any other authorized representative of the contractor and in such a case the personnel of the contractor shall attend such meetings.

21.3 Time is the essence of the Contract and the Contractor shall be responsible for performance of his works in accordance with the specified construction schedule. If at any time, the Contractor is falling behind the schedule, he shall take necessary action to make good for such delays by increasing his work force or by working overtime or otherwise accelerate the progress of the work to comply with the schedule and shall communicate such actions in writing to the site Engineer of TSECL, satisfying that his action shall compensate for the delay. The Contractor shall not be allowed any extra compensation for such action.

21.4 TSECL shall, however, not be responsible for provision of additional labour and / or materials or supply or any other services to the Contractor.

22.0 FIELD OFFICE RECORDS

The Contractor shall maintain at his Site office up-to-date copies of all drawings, specifications and other Contract Documents and any other supplementary data complete with all the latest revisions thereto. The Contractor shall also maintain in addition the continuous record of all changes to the above Contract Documents, drawings, specifications, supplementary data, etc. effected at the field and on completion of his total assignment under the Contract, shall incorporate all such changes on the drawings and other engineering data to indicate as installed conditions of the equipment furnished and erected under the Contract. Such drawings and engineering data shall be submitted to the Dy. General Manager in charge of the work in required number of copies.

23.0 CONTRACTOR'S MATERIALS BROUGHT ON TO SITE

23.1 The Contractor shall bring to Site all equipment, components, parts, materials, including construction equipment, tools and tackles for the purpose of the works under intimation to the site Engineer. All such goods shall, from the time of their being brought vest in TSECL, but may be used for the purpose of the Works only and shall not on any account be removed or taken away by the Contractor without the written permission of the site

Engineer of TSECL. The Contractor shall nevertheless be solely liable and responsible for any loss or destruction thereof and damage thereto.

23.2 After the completion of the Works, the Contractor shall remove from the Site under the direction of the site Engineer of TSECL the materials such as construction equipment, erection tools and tackles, scaffolding etc. with the written permission from him.

24.0 PROTECTION OF PROPERTY AND CONTRACTOR'S LIABILITY

24.1 The Contractor shall be responsible for any damage resulting from his operations. He shall also be responsible for protection of all persons including members of public and employees of TSECL and the employees of other contractors and Sub-contractors and all public and private property including structures, building, other plants and equipment and utilities either above or below the ground.

24.2 The Contractor shall ensure provision of necessary safety equipment such as barriers, signboards, warning lights and alarms, etc. to provide adequate protection and safety to persons and property.

25.0 INSURANCE

25.1 In addition to the conditions covered under the Clause entitled "Insurance" in General Terms and conditions of Contract, the following provisions shall also apply to the portion of works to be done beyond the Contractor's own or his Sub-contractor's manufacturing Works.

25.2 Workmen's Compensation Insurance

This insurance shall protect the Contractor against all claims applicable under the Workmen's Compensation Act, 1948. This policy shall also cover the Contractor against claims for injury, disability, disease or death of his or his Sub-Contractor's employee, which for any reason are not covered under the Workmen's Compensation Act, 1948. The liabilities shall not be less than:

Workmen's Compensation: As per statutory Provisions

Employee's liability: As per statutory Provisions

25.3 Comprehensive Automobile Insurance

This insurance shall be in such a form to protect the Contractor against all claims for injuries, disability, disease and death to members of public including the employees of TSECL and damage to the property of other arising from the use of motor vehicles during on or off the Site operations, irrespective of the ownership of such vehicles.

25.4 Comprehensive General Liability Insurance

25.4.1 This insurance shall protect the Contractor against all claims arising from injuries, disabilities, disease or death of members of public or damage to property of others, due to any act or omission on the part of the Contractor, his agents his employees, his representatives and Sub-contractors or from riots, strikes and civil commotion. This insurance shall also cover all the liabilities of the Contractor arising out of the Clause stipulated in the General Terms and Conditions of Contract.

25.4.2 The hazards to be covered will pertain to all the works and areas where the Contractor, his Sub-contractors, his agents and his employees have to perform work pursuant to the Contract.

25.5 The above are only illustrative list of insurance covers normally required and it shall be the responsibility of the Contractors to maintain all necessary insurance coverage to the extent both in time and amount to take care of all his liabilities either direct or indirect, in pursuance of the Contract.

26.0 UNFAVOURABLE WORKING CONDITIONS

The Contractor shall confine all his field operations to those works which can be performed without subjecting the equipment and materials to adverse effects during inclement weather conditions, like monsoon, storms, etc. and during other unfavorable construction conditions. No field activities shall be performed by the Contractor under conditions which might adversely affect the quality and efficiency thereof, unless special precautions or measures are taken by the Contractor in a proper and satisfactory manner in the performance of such Works and with the concurrence of the site Engineer of TSECL. Such unfavorable construction conditions shall in no way relieve the Contractor of his responsibility to perform the Works as per the Schedule.

27.0 WORK & SAFETY REGULATIONS

27.1 The Contractor shall ensure proper safety of all the workmen, materials plant and equipment belonging to him or to owner or to others, working at the Site as per CEA (Measures relating to Safety and Electric Supply) Regulation, 2010. The Contractor shall also be responsible for provision of all safety notices and safety equipment required both by the relevant legislations and also by the site Engineer as he may deem necessary.

27.2 The Contractor shall notify well in advance to the site Engineer of his intention to bring to the Site any container filled with liquid or gaseous fuel or explosive or petroleum substance or such chemicals, which may involve hazards. The site Engineer shall have the right to prescribe the conditions, under which such container is to be stored, handled and used during the performance of the works and the Contractor shall strictly adhere to and comply with such instructions. The site Engineer shall have the right at his sole discretion to inspect any such container or such construction plant/equipment for which material in the container is required to be used and if in his opinion, its use is not safe, he may forbid its use. No claim due to such prohibition shall be entertained by TSECL.

27.3 Further, any such decision of the site Engineer shall not, in any way, absolve the Contractor of his responsibilities and in case, use of such a container or entry thereof into the Site area is forbidden by the site Engineer, the Contractor shall use alternative methods with the approval of the Executive Engineer in charge of the work without any cost implication to TSECL or extension of work schedule.

27.4 Where it is necessary to provide and / or store petroleum products or petroleum mixtures and explosives, the Contractor shall be responsible for carrying-out such provision and / or storage in accordance with the rules and regulations laid down in the Petroleum Act 1934, Explosives Act, 1948, and Petroleum and Carbide of Calcium Manual published by the Chief Inspector of Explosives of India. All such storage shall have prior approval of the site Engineer of TSECL. In case, any approvals are necessary from the Chief Inspector (Explosives) or any statutory authorities, the Contractor shall be responsible for obtaining the same.

27.5 All equipment used in construction and erection by Contractor shall meet Indian / International Standards and where such standards do not exist, the Contractor shall ensure these to be absolutely safe. All equipments shall be strictly operated and maintained by the Contractor in accordance with manufacturer's operation Manual and safety instructions and as per Guidelines / Rules of TSECL in this regard.

- 27.6** Periodical Examinations and all tests for all lifting / hoisting equipment & tackles shall be carried-out in accordance with the relevant provisions of Factories Act 1948, Indian Electricity Act 1910 and associated Laws / Rules in force from time to time. A register of such examinations and tests shall be properly maintained by the Contractor and shall be promptly produced as and when desired by the site Engineer of TSECL or by the person authorized by TSECL.
- 27.7** The Contractor shall be fully responsible for the safe storage of his and his sub-contractor's radio-active sources in accordance with BARC / DAE Rules and other applicable provisions. All precautionary measures stipulated by BARC / DAE in connection with use, storage and handling of such material shall be taken by Contractor.
- 27.8** The Contractor shall provide suitable safety equipment of prescribed standard to all employees and workmen according to the need, as may be directed by site Engineer of TSECL who shall also have right to examine these safety equipment to determine their suitability, reliability, acceptability and adaptability.
- 27.9** Where explosives are to be used, the same shall be used under the direct control and supervision of an expert, experienced, qualified and competent person strictly in accordance with the Code of Practices / Rules framed under the Indian Explosives Act pertaining to handling, storage and use of explosives.
- 27.10** The Contractor shall provide safe working conditions to all workmen and employees at the Site including safe means of access, railings, stairs, ladders, scaffoldings, etc. The scaffoldings shall be erected under the control and supervision of an experienced and competent person. For erection, good and standard quality material only shall be used by the Contractor.
- 27.11** The Contractor shall not interfere or disturb electric fuses, wiring and other electrical equipment belonging to TSECL or other contractors under any circumstances, whatsoever, unless expressly permitted in writing by site Engineer of TSECL to handle such fuses, wiring or electrical equipment.
- 27.12** Before the Contractor connects any electrical appliances to any plug or socket belonging to TSECL, he shall:
- a) Satisfy the Site Engineer of TSECL that the appliance is in good working condition :
 - b) Inform the site Engineer of the maximum current rating, voltage and phases of the appliances;
 - c) Obtain permission of the site Engineer detailing the sockets to which the appliances may be connected.
- 27.13** The site Engineer shall not grant permission to connect until he is satisfied that;
- a) The appliance is in good condition and is fitted with suitable plug;
 - b) The appliance is fitted with a suitable cable having two earth conductors, one of which shall be an earthed metal sheath surrounding the cores.
- 27.14** No electric cable in use by the Contractor / TSECL shall be disturbed without prior permission. No weight of any description shall be imposed on any cable and no ladder or similar equipment shall rest against or attached to it.
- 27.15** No repair work shall be carried out on any live equipment. The equipment must be declared safe by the site Engineer before any repair work is carried out by the Contractor. While working on electric lines / equipment whether live or dead, suitable type and

sufficient quantity of tools shall have to be provided by Contractor to electricians / workmen / officers.

27.16 The Contractors shall employ necessary number of qualified, full time electricians / Electrical Supervisors to maintain his temporary electrical installations.

27.17 In case any accident occurs during the construction/erection or other associated activities undertaken by the Contractor thereby causing any minor or major or fatal injury to his employees due to any reason, whatsoever, it shall be the responsibility of the Contractor to promptly inform the same to the site Engineer of TSECL and also to all the authorities envisaged under the applicable laws.

27.18 The site Engineer of TSECL shall have the right at his sole discretion to stop the work, if in his opinion the work is being carried out in such a way that it may cause accidents and endanger the safety of the persons and / or property, and / or equipment. In such cases, the Contractor shall be informed in writing about the nature of hazards and possible injury / accident and he shall comply to remove short-comings promptly. The Contractor after stopping the specific work can, if felt necessary, appeal against the order of stoppage of work to the Executive Engineer in charge of the work within 3 days of such stoppage of work and the decision of the Dy. General Manager in charge of the work in this respect shall be conclusive and binding on the Contractor.

27.19 The Contractor shall not be entitled for any damages / compensation for stoppage of work due to safety reasons as provided in **para 27.18 above** and the period of such stoppage of work shall not be taken as an extension of time for completion of work and shall not be the ground for waiver of levy of liquidated damages.

27.20 It is mandatory for the Contractor to observe during the execution of the works, the requirements of safety rules which would generally include but not limited to the following:

Safety Rules:

- a) Each employee shall be provided with initial indoctrination regarding safety by the Contractor, so as to enable him to conduct his work in a safe manner.
- b) No employee shall be given a new assignment of work unfamiliar to him without proper introduction as to the hazards incident thereto, both to himself and his fellow employees.
- c) Under no circumstances shall an employee hurry or take unnecessary chance when working under hazardous conditions.
- d) Employees must not leave naked fires unattended. Smoking shall not be permitted around fire prone areas and adequate fire fighting equipment shall be provided at crucial locations.
- e) Employees under the influence of any intoxicating beverage, even to the slightest degree shall not be permitted to remain at work.
- f) There shall be a suitable arrangement at every work site for rendering prompt and sufficient first aid to the injured.
- g) The staircases and passageways shall be adequately lighted.
- h) The employees when working around moving machinery must not be permitted to wear loose garments. Safety shoes are recommended when working in shops or places where materials or tools are likely to fall. Only experienced workers shall be

permitted to go behind guard rails or to clean around energized or moving equipment.

- i) The employees must use the standard protection equipment intended for each job. Each piece of equipment shall be inspected before and after it is used.
- j) Requirements of ventilation in underwater working to licensed and experienced divers, use of gum boots for working in slushy or in inundated conditions are essential requirements to be fulfilled.
- k) In cases or rock excavation blasting shall invariably be done through licensed blasters and other precautions during blasting and storage / transport of charge material shall be observed strictly.

27.21 The Contractor shall follow and comply with all relevant Safety Rules, relevant provisions of applicable laws pertaining to the safety of workmen, employees, plant and equipment as may be prescribed from time to time without any demur, protest or contest or reservation. In case of any discrepancy between statutory requirement and relevant Safety Rules referred above, the later shall be binding on the Contractor unless the statutory provisions are more stringent.

27.22 If the Contractor does not take all safety precautions and/or fails to comply with the Safety Rules as prescribed by Consortium or under the applicable law for the safety of the equipment and plant and for the safety of personnel and the Contractor does not prevent hazardous conditions which cause injury to his own employees or employees of other contractors, or Employees of TSECL or any other person who are at Site or adjacent thereto, the Contractors shall be responsible for payment of compensation to Consortium members as per the compensation order issued by the appropriate authority of Government of Tripura / verdict issued by court.

The compensation mentioned above shall be in addition to the compensation payable to the workmen / employees under the relevant provisions of the Workmen's Compensation Act and rules framed there under or any other applicable laws as applicable from time to time. In case TSECL is made to pay such compensation then the amount of such compensation shall be deducted from the progressive bills / contract performance guaranty of the contractor.

28.0 CODE REQUIREMENTS

The erection requirements and procedures to be followed during the installation of the equipment shall be in accordance with the relevant Codes and accepted good engineering practice, the Engineering Drawings and other applicable Indian recognized codes and laws and regulations of the Government of India.

29.0 FOUNDATION DRESSING & GROUTING

29.1 The surfaces of foundations shall be dressed to bring the top surface of the foundations to the required level, prior to placement of equipment / equipment bases on the foundations.

29.2 All structural steel base shall be grouted and finished as per these specifications unless otherwise recommended by the equipment manufacturer.

29.3 The concrete foundation surfaces shall be properly prepared by chipping, grinding as required to bring the type of such foundation to the required level, to provide the necessary roughness for bondage and to assure enough bearing strength. All laitance and surface film shall be removed and cleaned.

29.4 Grouting Mix

The Grouting mixture shall be composed of Portland cement, sand and water. The Portland cement to be used shall conform to ISI No. 269 or equivalent. Sand shall conform to ISI No. 383 / 2386 or equivalent. All grouts shall be thoroughly, mixed for not less than five minutes in an approved mechanical mixer and shall be used immediately after mixing.

29.5 Placing of Grout

29.5.1 After the base has been prepared, its alignment and level has been checked and approved and before actually placing the grout a low dam shall be set around the base at a distance that shall permit pouring and manipulation of the grout. The height of such dam shall be at least 25 mm above the bottom of the base. Suitable size and number of chains shall be introduced under the base before placing the grout, so that such chains can be moved back and forth to push the grout into every part of the space under the base.

29.5.2 The grout shall be poured either through grout holes provided or shall be poured at one side or at two adjacent sides giving it a pressure head to make the grout move in a solid mass under the base and out in the opposite side. Pouring shall be continued until the entire space below the base is thoroughly filled and the grout stands at least 25 mm higher all around than the bottom of the base. Enough care should be taken to avoid any air or water pockets beneath the bases. Vibrator shall be used to avoid any air or water pockets.

29.5.3 Finishing of the Edges of the Grout

The poured grout should be allowed to stand undisturbed until it is well set. Immediately thereafter, the dam shall be removed and grout which extends beyond the edges of the structural or equipment base plates shall be cut off, flushed and removed. The edges of the grout shall then be pointed and finished with 1:6 cement mortar pressed firmly to bond with the body of the grout and smoothed with a tool to present a smooth vertical surface. The work shall be done in a clean and scientific manner and the adjacent floor spaces, exposed edges of the foundations, and structural steel and equipment base plates shall be thoroughly cleaned of any spillage of the grout.

All civil materials required such as cement, steel, sand, stone, binding wires, embedded pipe, conduct, shoring and shuttering, nail, water will be supplied by the contractor of his own whatsoever irrespective of mentioning by TSECL which are required to complete the works to the full satisfaction of TSECL.

SECTION – V
TECHNICAL SPECIFICATION

A. TOWER AND ACCESSORIES

1.0 SCOPE

This specification covers fabrication including galvanization, testing before dispatch of the galvanized steel tower and accessories specified herein after for Construction of 132 KV Towers as per IS: 802 for structural steel and IS: 2633 / 1964 or as amended latest.

2.0 TYPE OF TOWER

Tower shall be used self supporting lattice steel towers. The lattice members shall be of galvanized steel including stub- member. There are three main types of tower i.e. Type – A, B & C with necessary extension part. Details are given below.

- i) **Type – ‘A’ (D/C Towers):** - These are tangent tower for use on straight line and for angle up to 2⁰ deviations with or normal span of 305 meters and also for smaller angle with longer span.
- ii) **Type – ‘B’ (D/C Towers):** - These towers shall be used up to 30⁰ deviations with a normal span of 305 meters and also for smaller angle with longer spans.
- iii) **Type – ‘C’ (D/C Towers):** - These towers shall be used for 30⁰ to 60⁰ deviations with a normal span of 305 meters and also for smaller angle with longer spans.

For all type of tower the types shall have suitable for normal with necessary extension as required at the base without reduction of specified factor of safety. For each tower the tower drawing shall be furnished with all details for all normal towers & extension portion by the contractor in six copies along with bill of materials.

Workshop drawings of all types of towers are to be submitted to the Department by the contractor before fabrication work and proto testing of towers shall to be arranged by the contractor at his works giving 15 (fifteen) days notice to the Department for its witness in the testing.

3.0

- i) The phase conductors shall be of conventional triangular configuration single circuit construction with earth wire suitably installed at the top to allow an angle of shield or protective angle of 30°. This is the angle between the vertical lines through the center of the earth wires and the line connecting the centers of the phase conductor.
- ii) The tower shall be bolted type and sufficiently tightened punched and riveted before stringing the line.
- iii) (a) Step – Bolts: -

Each tower shall be provided on one of the legs with step bolts of 175 mm long spaced 450 mm apart and extending from 2500 mm above the ground level to the top of the tower. Each step bolt shall be provided with two nuts in one end to fasten the bolt tightly to the tower and a button head the other end to prevent the foot from slipping and shall be capable of withstanding a vertical load of not less than 150 kg.

- (b) Minimum sizes of materials: -

Minimum thickness of leg member shall be 6 mm and bracing members shall be 5 mm. No bolts less than 16 mm diameter nor any angle through which a bolt passes less than 45 mm

shall be used. The thickness of Gusset plate shall not be less than 6mm. All nuts & bolts shall be made with proper galvanization.

4.0 DANGER, NUMBER AND PHASE PLATE: -

- i) Each tower shall be provided with a number plate Danger plate and phase plate (R, Y, B) at all locations. The plate shall be of M.S. Sheet of 2 mm thickness and vitreous enameled on white background. The rear side of the plate shall be enameled black. On the number plates shall be included the number of tower location preceded by letter defining the type of the tower. On the danger plate the BIPAD in Bengali & KHATRA in Hindi, also the transmission voltages in both the languages and in KAKBARAK shall be suitably inscribed phase plate shall be coloured Red, Yellow and Blue to indicate the phases of the conductor accordingly to attachment to conductor on the tower.
- ii) The sizes and dimensions of the number plate and phase plate and of the letter there on shall be as per IS: 5613 (part – II / sec – 1) of 1976. The Danger plate shall be conforms to IS: 2551 of 1963. These shall be connected to the tower by 16 mm diameter galvanized bolts, nuts and washers. Necessary holes shall be provided in the plates.

- 5.0**
- i) All the locations may be fitted with an anti-climbing device of approved design made of galvanized barbed wire and arranged on the tower at a suitable height to have their circles of wire in the form of an umbrella on the outside of the tower and a similar number inside the tower.

- ii) Necessary holes on the tower members for installation of the anti-climbing devices shall be provided on each tower.

6.0 NUTS, BOLTS AND WASHERS: -

Assembled tower shall have bolts heads on the outer surface of towers and a similar inside the tower.

7.0 DRAWINGS: -

The tenderer shall furnish the following drawings along with design parameters for (i) normal soil (ii) submerged locations along with tender.

- 1) Foundation for each type of tower, the drawing shall furnish the following information:-
 - a) Dimension of excavation.
 - b) Volume of concrete and dimension of concrete foundation as well as of the stub.
- 2) Tower drawings with all design parameters shall be furnished for all type normal towers & necessary extension portion, by the contractor to the department with bill of materials along with the tender. All types of tower members in 6 (six) copies each shall be submitted to the TSECL. Drawings for Danger plate, phase plate, number plate, Anti-climbing device step bolt, U-Bolts for earth wire, D- Shackle for each shall be submitted to the TSECL. Drawings for Danger plate, Phase plate, number plate, Anti-climbing device step bolt, U-Bolts for earth wire, D–Shackle for earth wire have to be submitted to the TSECL in 6 (six) copies with the tender.
- 3) Detail drawings for conductor accessories, insulator accessories, earth wire accessories shall be submitted in 6 (six) copies with the tender.

8.0 DETAILS OF FABRICATION AND WORKMANSHIP: -

The fabrication of towers shall be in accordance with following: -

Except where here-in-after modified details of fabrication shall conform to the relevant IS: 800 of 1962 and as amended time to time.

- i) All parts of tower shall be fabricated in accordance with the shop drawing approved by the Department.
- ii) Tower shall be bolted, construction unless otherwise specified. Welding at any point shall not be permitted.
- iii) Members, bolts, nuts, washers etc. shall be galvanized.
- iv) Workmanship and finish shall correspond to the most modern transmission line practice. All similar parts shall be made strictly inter changeable.

9.0 BOLTS, NUTS AND WASHERS: -

- i) All bolts & nuts shall conform to IS: 1363 of 2002. All bolts and nuts shall be galvanized in accordance with IS: 2633 of 1964 and shall be have hexagonal heads. Fully threaded bolts shall not be used. The length of the bolts shall be such that the threaded portion will not extend in to the plane of contract of the member.
- ii) The price of bolts, nuts and washers shall be quoted extra per ton basis. The weight of bolts, nuts and washers shall not be exceeding 10% weight of tower.

10.0 ERECTION MARK: -

Each individual tower member shall carry code number **(A/428.....B/428....C/428)** conforming to the component Number given to it in fabrication drawings. The code number of approved sizes shall be stamped with a metal die on the member before galvanizing. The letter 'A', 'B', 'C' indicating the different type of towers shall precede the code number. Erection work shall be done as per CBIP Manual.

11.0 GALVANISING: -

All members of galvanized towers including stub (Partly) along with its cleats fixing attachments for insulator strings, ground wire clamp. Bird-guard anti climbing devices and the fixing arrangements for danger, number and phase plates shall be hot dip galvanized.

11.1 Galvanizing shall be done by hot dip process in full compliance with IS: 2629 of 1966 with latest amendments. After galvanizing, the surface shall be free from all sharp edges and metal modules and there should be no clogging of bolt holes due to stay of sizes.

11.2 Galvanizing shall be done after completion of all fabrication work. All galvanized shall withstand test as per IS: 2633 of 1964. In all other respects also such as zinc spelter to be used, weight of zinc casting etc. the galvanizing shall conform to IS: 2633 – 1964.

11.3 Only the black weight of steel shall be considered for measurements & payments.

12.0 TESTING OF TOWER MEMBERS: -

Each type of tower members shall be tested for thickness of galvanization.

B. INSULATORS AND HARDWARE: -

1.0 The string arrangement for the various locations shall be as under:-

- i) 9 – Unit 120 KN disc insulator for normal suspension locations.
- ii) 10 – Unit 120 KN disc insulator for normal tension location.
- iii) 9 – Disc double suspension string for special locations (crossing of road, river etc.).
- iv) 10 – Disc Double tension string for special locations (crossing of road, river etc.).

2.0 INSULATOR ASSEMBLES: -

Each insulator string assembly be complete in all respect and shall include the necessary fittings for attachment to the hangers at suspension points and to the strain plates at the tension points and shall to be supplied by the tenderer. All fitting shall conforming to the requirement of IS: 2486 part – II / 1974. The accessories of the insulator hard wire fitting shall be supplied as per attached schedule.

3.0 SUSPENSION CLAMPS: -

3.1 The suspension clamp shall made of malleable iron or aluminum alloy hot dip galvanized and shall be suitable to accommodate the Aluminium Alloy Stranded Conductor of size 37/3.15 mm with a set of preformed armour rods as detailed in technical specification suitable sheet aluminum liners shall be provided.

3.2 STRENGTH: -

The suspension clamps shall be a slipping strength of not less than 1336 kg i.e. 50% of the maximum horizontal tension of the conductor which is 3471 kg and ultimate strength shall not be less than 9095 kg.

3.3 TENSION CLAMP: -

The bolted type tension clamps (four bolts) shall be of malleable iron or aluminum alloy, hot dip galvanized lined with sheet aluminum lines and shall be suitable to accommodate the Aluminium Alloy Stranded Conductor of size 37/3.15 mm with necessary binding tapes etc.

3.4 The strain Clamp shall have the same conductivity of the conductor and shall be of design that will ensure unrestricted flow of current without the use of P.G. Clamps.

3.5 STRENGTH: -

The tension clamps shall be a slipping strength of not less than 8000 kg.

4.0 POWER CONDUCTOR: -

This work covers supply, erection, commissioning and testing of required materials to complete the overhead stringing by Aluminium Alloy Stranded Conductor of size 37/3.15 mm and shall conform to ISS : 398 (Part – II) – 1996 and as amended up to date.

5.0 POWER CONDUCTOR'S ACCESSORIES: -

5.1 JOINTS AND JOINTING TOOLS: -

Any type of joint in line with the manufacturer's standard practice may be offered, but the compression type will be preferred. The joints shall be the same conductivity as the conductor and mechanical strength shall not be less than 95% of the tensile strength of the conductor and shall be suitable to accommodate Aluminium Alloy Stranded Conductor of size 37/3.15 mm with necessary binding tapes etc.

5.2 VIBRATION DAMPERS AND PREFORMED ARMOUR RODS: -

The tenderer shall quote for preformed Armour rods for all suspension points and stock bridge vibration dampers (4 R type) for all tension points. These anti vibration devices should eliminate the fatigue on conductor due to vibration.

5.3 The power conductor accessories shall conform to the provisions of IS: 2121 of 1962 (As amended up to date).

6.0 GROUND WIRE'S ACCESSORIES: -

6.1 JOINTS AND JOINING TOOLS: -

Any type of compression joint in the line with the manufacturer's standard practice may be offered. The joint shall have the same conductivity as the ground wire and the mechanical strength shall not less than 95% of that of the ground wire shall have no sharp points. The clamp shall conform to IS: 2486 (part – I) of 1971 last amended up to date. The clamp shall be connected to tower strain plate by means of anchor shackle. The complete assembly shall be so designed as to avoid undue bonding in any part of the clamp and shall not produce any hindrance to the movement of clamp in horizontal and vertical directions. One of the bolts holding the jumper terminal of the tension joint shall be sufficiently long and provided with washers, nut and locking nuts to accommodate the lug on the bonding pieces, the tension clamp shall have mechanical strength not less than 5424 kg slip strength not less than the mechanical strength.

6.2 SUSPENSION CLAMP: -

The suspension clamps shall be suitable for 7/3.15 mm, 110 kgf /mm² quality galvanized stranded ground wire. The suspension clamps shall be of the conventional type having freedom of oscillation and free movement about the horizontal as well as the vertical axis. The clamp piece and the clamp body shall be clamped by two U-bolts. One limb on the U-bolts shall be long enough to accommodate the lug of bending pieces. The suspension clamps have slip strength not less than 1430 kg.

6.3 TENSION CLAMP: -

The tension clamp shall be on the 4 (four) U-bolted type and shall be made of forged steel the clamp surface coming in contact with the ground wire shall have no sharp points. The clamp shall conform to IS: 2486-(P-1) of 1971 as amended up to date. The clamp shall be connected to tower strain plate by means of anchor shackle. The complete assembly shall be so design as to avoid undue bonding in any part of the clamp and shall not produce any hindrance to the movement of clamp in horizontal and vertical directions. One of the bolts holding the jumper terminal of the tension joint shall be sufficiently long and provided with washers, nuts and locking nuts to accommodate the lug on the bonding pieces. The tension clamps shall have mechanical strength not less than 5424 Kg slip strength not less than the mechanical strength.

6.4 ATTACHMENT TO TOWERS: -

At all suspension towers of structures, the ground wire shall be suspended by suitable suspension by suitable suspension clamps and effectively bonded to the tower. One strain tower suitable tension clamps effectively bonded to the tower to the satisfaction of the TSECL shall be provided at the top of the tower.

6.5 Come along clamps and Dynamometers shall be used for stringing of ground wire, Suitable bonded type comes along clamps and dynamometers shall be used during stringing. The slipping strength of the clamps shall not be less than 50% of the ultimate strength of the Ground wire.

7.0 STRINGING OF GROUND WIRE:

The ground wire shall be strung in such a manner that the factor of safety shall not be less than 2.73 at 5^oc and wind pressure of 112.5 kg / sqm. on full span length. Also the tender at 32.2^oc without external wind shall not exceed the following percentage of the ultimate strength of the ground wire.

Initial unloaded tension = 35 %,

Final unloaded tension = 25 %

The contactor shall specify the methods of stringing and submit for approval stringing charts showing tensions and sags for various temperature and spans.

C. CHECK AND FINAL SURVEY

1.0 SCOPE: -

Check Survey should be done using GPRS, Total Work Stations, Long Range Scanner and Digital Theodolites of reasonable accuracies or alternatively using ALTM (Airborne Laser Terrain Modeling) Technique. The section covers the finalization of the alignment where ever necessary of the transmission line, check and final survey, route profile, tower spotting and soil testing for determination of bearing capacity of the soil at selected locations along with final transmission line route of 132 KV transmission line.

2.0 TRANSMISSION LINE ROUTE: -

The TSECL has established the survey of the transmission line route out. The survey report will be handed over to the successful tenderer during work. The route alignment of the line is enclosed in exhibit.

3.0 CHECK SURVEY: -

3.1 The work relating to the check survey of the transmission line route shall include. Checking of route with the approved profile with due ground clearance, pegging out centers of tower locations if needed at site.

3.2 Any tree cutting & removal of branches & bushes etc. to facilities the final survey work shall be responsibility of the successful tenderer.

3.3 Permission for conducting survey etc. the necessary permission for carrying out the final survey along with the approved transmission line route will be obtained by the TSECL.

3.4 The level of the starting point shall be fixed with reference to the nearest bench mark (GTS).

3.5 The profiles whenever necessary shall be prepared on scale of 1 cm = 20 mtrs. horizontal & 1 cm = 2 mtrs. Vertical, in rolls of convenient lengths on the towers required to be erected on the lines shall submitted to the TSECL for approved.

3.6 At the time of check, the route should be cleaned of jungle, trees of all girths & bushes up to 9 (nine) meters on either sides from the centre of tower along the transmission line route.

3.7 Peg marks shall be of concrete pillars only.

3.8 SAG-TENSION CHART: -

The contractors shall prepare the sag-tension chart for the total length of the line & submit the same along with sag tension calculation for approval of TSECL. Only the approved sag-tension chart shall be followed for tower stringing.

3.9 PROGRESS REPORT: -

Monthly progress reports of check & final survey works in triplicate shall be regularly submitted to the TSECL.

D. DETAILS OF WORKS

1.0 Details of works are given below: -

1.1 The construction work shall include: -

- a) Clearance & unloading of all materials at destination / Go-down of carrier.
- b) Transmission of materials from the carrier's premises to the store at site. Successful tenderer shall arrange the stores.
- c) Distribution of all materials to respective tower sites Final & check survey.
- d) All construction works for the tower foundation such as excavation, centering, shuttering, shorting, cement concreting, back filling of earth, ramming & any other item covered by the latest PWD schedule, including protection works.
- e) Setting of stubs erection of tower superstructures, grounding of towers including supply of materials such as G.I. pipe, galvanized steel, flat of size 50 X 6 mm, salt, charcoal etc., fitting up all accessories of ,stringing of power conductors & ground wire & hoisting of insulators & fitting thereof including double jumpering etc, to complete the line in all respect.
- f) Testing & commissioning of the line: -

All phase of works of erection of transmission line covered under this section shall be carried out with best workmanship & modern Engineering practices for construction to the satisfaction & approval of the Department representatives at site.

1.2 Contractor shall be responsible for the damage to or loss of materials at any stage during supply, transportation, storage & erection.

1.3 Rates for construction: -

Rates are required for the complete construction of transmission line in the following units as shown separately.

1.4 Stub-setting: -

This works shall include all preliminary work such as check survey, preparation & checking of final tower schedule, setting of tower locations & all construction work for tower foundations such as effective (in all classes of soil) setting of stub, centering, shuttering shorting, de-watering (Mechanical or manual). Cement concretes including cutting, proper finishing etc. back filling, all protection work such as brick / revetment etc, as required & clearness of all surplus excavated soil etc, including supply of all ingredients to complete the job.

1.5 Superstructure Erection: -

Cleaning, transportation, unloading & distribution to site of tower materials & accessories including danger plates, number plates, phase plates, bird-guards, anti climbing devices etc.& erection of tower on above stubs etc. as required.

1.6 Hoisting of Insulator strings:-

Cleaning, transportation, unloading & distribution to site of towers location of insulators & accessories & hoisting of insulators strings complete as required.

Each & every insulator shall be tested by the 5 KV Megger in presence of site Engineer before hoisting of the same.

1.7 **Stringing of Power conductors: -**

Carrying & transportation, unloading, laying, stringing, tensioning & jumpering of power conductors and fixing of all accessories such as armoured rods, vibration dampers, PG Clamps, Repair Sleeve, Joints etc. as required to complete per six power conductor shall be handled as per conductor code practice along with cleaning / clearing of jungles, bushes and trees of all girth up to 9 (nine) mtr. on either sides from the centre of tower.

1.8 **Stringing of Ground – wire: -**

Carrying & transportation, unloading, laying, stringing, tensioning & jumpering of ground-wire & fixing of all accessories such as tension clamps, suspension clamp, vibration damper, PG Clamps, Earth Bond etc. to complete the transmission line.

1.9 **Earthing of Towers:-**

Providing earthing of each tower with hot dip galvanized 40 mm dia 3 mtr long heavy duty pipes, along with 50 X 6 mm GI flats etc. as required including supply of salt, charcoal etc., as required to ensure 0.5 ohm or counterpoise earthing.

1.10 **Right of Way / Way Leave: -**

TSECL shall arrange the right of way / way leave required for the transmission line. Expenses towards shifting of existing power / telecommunication line (if required) shall be borne by the bidder.

1.10.1 Any extra land required for by the contractor temporarily for dumping to construction materials & consequent damage to crops etc. shall be the responsibility of the contractor. The Department shall also not be responsible for arranging of way for mechanical transport of materials form road side to location site. If the contractor has to be adopt any such arrangements, may be do so with the consent of the proprietor/ owners & compensation in that respect will be his own responsibility. The contractor shall take all responsible steps for preventing damage to crops during the execution of the work.

1.10.2 Clearance of the jungle & cutting of trees, branches, bushes etc. obstructing the erection of the transmission line up to **12 (Twelve) mtr.** on either sides from the centre of tower all along the transmission line shall be the responsibility of the contractor, government authorization, of any required for cutting of trees shall be obtained by him & hand over these to the authorized representative of the Forest Department available at site.

1.10.3 The contractor shall be required to provide his own expense for necessary erection tools & plants such as surveying instruments, Tackles, spanners, wrenches, pumps, timbering jacks winches, ropes, all construction machineries such as tractors, Bulldozers, etc. The following special tools shall be required to provide at his own expense.

- a) Hydraulic compressor and dies (both for conductor and ground wire)
- b) Dynamometer
- c) Cum-along clamp etc.

1.10.4 **Setting Out: -**

Detailed check survey of the transmission line including preparation of plan & profiles, plotting of tower locations on the profile pegging out of centers of tower location of site.

1.10.5 Work shall not be started in any length until the Department in writing has approved the tower erection schedule. The contractor shall be responsible for correct setting of tower as

per approved profiles. If after erection any tower is found to be out of approved alignment, contractor shall dismantle at his own cost.

1.11 **Tower Drawings: -**

TSECL will provide as-built drawing of foundation details and tower structures of A, B & C type tower up to +6 mtr. extension to the successful bidder. However, in special cases where more height of tower is required, the L₁ bidder will submit such design & drawing.

The joints between the tower stubs and the superstructure corner posts shall be about 300 mm from ground level and shall not be enhanced in concrete.

1.12 The work shall include all necessary Brick revetment, concreting & earth filling above ground level & clearance from of stacking on the site of all surplus excavated soil. Special measure for protecting the foundations may have to be taken in respect of locations of Nalah, River etc. by providing suitable crates of galvanized wire netting & meshing packed with boulder.

1.13 Concreting of foundation shall be in the concrete mixture & proportion as specified in **Appendix – A**. It shall be carry out in the presence of Departmental representative at site to some adequate advance intimation of programmed of work shall be given. The whole foundation work shall be completed in one continuous process.

1.14 **Excavation of tower footing: -**

Except as here in provided, all excavation for footings shall be made to the lines and grades of the foundation. The excavation walls shall be vertical and the pit dimension shall be such as to allow a clearance of not less than 150mm on all sides from the foundation. Any excavation done beyond the lines of the foundation had shall be at expense of the contractor and sand, mud, silt or other undesired materials which may accumulated in excavated pit shall removed by the contractor for which no extra payment shall be made by the department .For the purpose of payment, the excavation rate shall remain same in all classes of soil at unit rate (whatever might be the classes of soil).

1.15 Each tower shall have four footing. The four footings of any tower shall be identical unless otherwise approved by the department. Each footing shall consist of a steel stub angle together with cleats in concrete or reinforced concrete as, may be directed by the Department. The stub shall be set concretely in accordance with approved method at the exact location and alignment and precisely in correct levels with the help of stub setting templates. Stub shall be set in the presence of Departmental representative present at site of which adequate advance the contractor shall give intimation to the department. Irrespective of departmental supervision the responsibility of correct setting of tower shall rest on the contactor only.

1.16 **Erection of tower: -**

1.16.1 The method shall be left to the contractor subject to his responsibility for any damage to materials due to any cause.

1.16.2 All joints shall be cleaned & painted with one coat of red lead and coat of aluminum paint on all contact surfaces.

1.16.3 After the final tightening of the bolts, nuts the threads shall be center punched so as to prevent loosening under temperature changes or vibrations.

1.16.4 The towers must be truly vertical after erection and so stringing, pulley of tower will be permitted after erection in case the tower is found in order.

- 1.16.5 The maximum tolerance permissible is 25 mm per 9 meter in height.
- 1.16.6 Each tower shall be fitted with number plate, Danger plate, Phase plates and anti-climbing devices on all location. Bird guards shall be provided at suspension tower.
- 1.16.7 All bolts shall be well tightened by using spring washers and finally welded.
- 1.17 **Clearance from Ground, Building, trees etc: -**
- 1.17.1 The clearance between the latest line conductors and ground in still air under the maximum specified temperature conditions shall be not less than 6.10 meter except for the line conductor running along or across any street in which case the above clearance shall not be not less than 6.10 meter.
- 1.17.2 The vertical clearance under all specified conditions between any part of any fences, walls, buildings or other structure on which a man may stand, and the horizontal clearance between the nearest conductor and may part of fences, walls, buildings etc shall be as per IE Rule 1956.
- 1.17.3 The clearance from power lines, Telecommunication lines etc. shall be in accordance with relevant IE Rules.
- 1.17.4 The clearance under all specified conditions of operation shall be shall be as per IE Rule 1956 between the nearest line conduction & any trees and hedges standing underneath or long side the line.
- 1.18 **Stringing of conductor & earth-wire: -**
- 1.18.1 The contractor shall be responsible for any injury to the conductor or earth- wire during the erection work. Every care shall be taken to ensure that the conductor is not damaged along the ground & rough surface during stringing. Wooden rollers shall be provided at suitable distances & the conductor shall be pulled on this rollers.
- 1.18.2 All joints shall not be less than 50 M from adjoining towers. Not more than one joint should have in one conductor of the line in any one span. Also there shall be no joint in sections between tensioned point's less than three spans apart. There shall be no joints in spans over railways, cannels, rivers or buildings nor shall there be any joint in the span adjacent to the span crossing the above obstacles, if the crossing span is not terminated at the support. All conductors shall be pre-stressed to their maximum working load at the time of stringing.
- 1.18.3 The maximum & minimum temperature of the conductors when carrying currents accepted in calculating the tensions. Sag tension charts for the conductors & ground wire under normal operating conditions shall be on the above basis shall be supplied by the contractor and shall strictly aware to these charts while stringing the power conductors and earth wire.
- 1.18.4 The earth wire shall be strung & securely clamped to the tower before the conductors are drawn up.
- 1.18.5 Dynamometers shall be used for tensioning the conductors & earth wire & periodical checks of the instruments shall be made with a standard dynamometer. When the conductor have been drawn up & transferred from the snatch blocks to the insulator clamps, the suspension insulator string shall be made to hang vertically before the clamps are tightened up. The contractor shall be fully responsible for any damage to tower through over stressing during stringing.
- 1.18.6 Great care shall be taken to see that conductors are not over tensioned. Extra sag of 150 mm to 330 mm shall be allowed at all important points like river crossing. The factors of safety for stringing the conductor shall be as per specification. The charge for stringing of conductors

shall include the erection of the vibration dampers at tension points & preformed Armour rods at suspension locations jumpering, clamping, joints etc.

- 1.18.7 For the purpose of accounting of conductors and earth wire the contractor shall be allowed use of conductors to the extent required as per route length plus 3 (three)% for each phase to cover sag, jumpers, wastages etc.
- 1.18.8 Preformed Armour rod shall be installed at each suspension points and vibration dampers at the tension points.
- 1.18.9 All jumpers to be made by 2 (two) nos. P.G. clamp.

2.0 Earthing: -

- 2.1 Each tower shall be grounded by means of 40 mm dia. hot dip perforated heavy duty G.I. Pipe of 3 meter long and driven in ground near the tower & electrically connected to the tower legs by 50 mm X 6 mm galvanized steel flat & suitably filled by salt (at least 350 mm thick) & charcoal at intervals to facilitate in gross of moisture.
- 2.2 The contractor shall arrange for measuring the resistance of each earth pits in presence of the Department representative & a record shall be maintained & signed by the by the contractor. If the tower footings resistance is more than 10 Ohm the tower shall be further grounded by means of additional one or more 40 mm dia, hot galvanized iron pipes of 3 meter long buried in good soil as near the tower as practicable and electrically connected to one or more of the other three legs by 50 X 6 mm galvanized steel flats & galvanized nuts, bolts & washers.
- 2.3 Where the tower stand on rock, effort shall be made to obtain a good ground by carrying a length of galvanized steel taps from tower legs to the pipe driven in damp soil at short distance from the tower as possible. The connecting taps of 50 X 6 mm G.I. flat shall be buried in a groove out in the rock surface and adequately protected from damage.

3.0 Erection schedule: -

The tenderer shall submit a detailed check and final survey, an erection schedule covering phases of work starting from the date of award of contract till the final completion, testing & commissioning of transmission line.

3.1 Claim for idle period: -

The contractor shall not be entitled for any extra claims for any idle period on account of delay in availability of materials & no reimbursement of charges for contractor's field staff shall be allowed for such a period.

3.2 Progress report: -

This contractor shall maintain a site book in triplicate where entries of day work done by the contractor shall be made and same will countersign by the Engineer authorized by the Department. The contractor shall submit the monthly progress report together with a copy of the site book. Another copy of site book shall be submitted with monthly bill & the contractor shall retain the third copy of the site book. The progress of the work shall be super imposed on the construction schedule and submitted to the department with each weekly report.

4.0 Testing & commissioning: -

4.1 General: -

Before the line is energized, it shall be the thoroughly inspected keeping in view the following points.

- a) Sufficient back filled earth is placed over each foundation pit and is adequately compact.
- b) Any damage minor or major to the conductor, earth wire & accessories & insulator strings observed are to be made good.
- c) The stringing of conductor and earth wire has been done as per the approved sag & tension charts & desired clearance are available.

The authorized representative of the tender, therefore, shall be given 15 (fifteen) days notice to the Department for the commencement of the commissioning tests.

4.2 **Testing: -**

In addition to the test stipulated in IS: 5613 (part – II / section – 2) 1976, the tower footing resistance & conductors & guard wire sags at the location as decided by the Department shall be checked. All arrangement for testing shall be made by the contractor & necessary labour transport and he shall provide equipment.

Any defect revealed as a result of testing shall be rectified by the contractor forth with to the satisfaction of the Department without any extra charges.

Before taking over the line by the Department the line shall be energized at full working voltage.

4.2.1 **TECHNICAL PARTICULARS FOR 132 KV TRANSMISSION LINE: -**

Sl. No.	Description	Characteristic Volumes
1.	Line voltage	132 KV
2.	No. of circuit	Single Circuit
3.	Frequency	50 Hz
4.	Earthing	Effectively earthed
5.	Normal span	305 meters

4.2.2 **POWER CONDUCTOR: -**

Aluminium Conductors Steel Reinforced (ACSR) of size 30/7/3.0 mm as per IS: 398 (Part – II) / 1996 and as amended up to date.

4.2.3 **POWER CONDUCTOR ACCESSORIES: -**

a) **Mid-span compression joint: -**

- i) Type : - Compression
- ii) Materials : - Aluminium Steel re-in forced suitable for ACSR.

b) **Snap of cross section: -**

- i) Before compression : - Round
- ii) After Compression : - Hexagonal

c) **Vibration Damper: -**

- i) Type : - Stock bridge 4 – R type
- ii) Materials : - Aluminum alloy
- iii) Messenger cable : - High strength steel wire

d) Armour rod: -

- i) Type : - Preformed
- ii) Conductivity : - Not less than 40% of IACS
- iii) Shape of end : - Ball end
- iv) Direction of lay : - Right hand

4.2.4 GROUND WIRE ACCESSORIES: -

a) Mid span joint: -

- i) Type : - Compression
- ii) Material : - MCI
- iii) Minimum failing load : - 5425 Kgs

b) Suspension clamp: -

- i) Type : - Conventional (2-U bolted type)
- ii) Materials : - MCI
- iii) Skip strength : - 1430 Kg
- iv) Minimum failing load : - 5710 Kg
- v) Galvanization : - Hot dip.
- vi) Spring washers : - Electro galvanized
- vii) Other ferrous parts : - Hot dip galvanized

c) Tension clamp: -

- i) Type : - Compression / Bolted (4-U bolted type)
- ii) Material : - MCI
- iii) Minimum failing load : - 8640 Kg

d) Earth-Bond: -

- i) Materials : - Tinned copper (as per IS: 2982 of 1956)
- ii) Stranded wire diameter : - 37/0.47 mm
- iii) Thimble : - Tinned copper
- iv) Length : - 500 mm (approx.)

e) Galvanization: -

- i) Spring Washers : - Electro galvanized as per IS: 1573
- ii) Other ferrous parts : - Hot dip galvanized.
- iii) Castings : - As per IS: 729 of 1961
- iv) Wires : - As per IS: 4826 of 1968
- v) Bolts & nuts : - As per IS: 5358 of 1969

f) Earth wire: -

- i) Material : - Galvanized steel as per ISS 2141 & 4826

- ii) Body : - MCI
- iii) Bolts & Nuts : - Galvanized steel
- iv) Minimum failing load : - 5425 Kg
- v) Minimum slip strength : - -do-
- vi) Galvanization: -
 - Spring washers : - Electro galvanized
 - Other ferrous parts : - Hot dip galvanized.

4.2.5 INSULATORS AND CLAMPS

A.	i)	No. of disc insulator in suspension string	: -	Single 1 x 9	Double 2 x 9
	ii)	No. of disc insulator in tension string	: -	Single 1 x 10	Double 2 x 10
	iii)	Size of disc insulator	: -	255 mm X 145 mm (As per IS: 731/1971, IS: 3188/1980 & IS: 137/1960).	
	iv)	Type of disc insulator	: -	Ball & Socket [conforming to IS: 2486 (Part – II of 1974) amended up to date]	
	v)	Colour of disc insulator	: -	Brown	
	vi)	Surface	: -	Glazed	
	vii)	Size of-pin-ball shank	: -	16 mm	
	viii)	Creepage distance	: -	280 mm	
	ix)	Electro mechanical strength	: -		
		a) Suspension string	: -	120 KN	
		b) Tension string	: -	120 KN	

B. TENSION CLAMPS: -

- i) Type : - Bolted (4 U-bolt)
- ii) Material : - High strength aluminum alloy

C. SUSPENSION CLAMPS: -

- i) Type : - Conventional (2-U bolt type)
- ii) Materials: -
 - a) Body : - High strength aluminium alloy
 - b) Supporting and clamping Components : - Galvanized steel

D. BOLTED TYPE CLAMP: -

- | | | | |
|------|------------------------------|-----|--|
| i) | Clamp body and deeper places | : - | High strength & treated cost aluminium alloy |
| ii) | Cotter bolts and U-bolts | : - | Hot dip galvanized |
| iii) | Slip strength | : - | 9000 Kg |
| iv) | Mechanical strength | : - | 9000 Kg |

APPENDIX – A

SPECIFICATION FOR CONCRETE FOUNDATION OF TRANSMISSION LINE

The concrete foundation for transmission line towers consists of two portions, viz (I) pyramid (ii) chimney conforming to IS: 5613 (Part – II / section – 2) of 1976. In chimney portion, the thickness of the concrete should be such that it provides a minimum cover of not less than 100mm from any part of the stub angle to the nearest outer surface of the concrete in respect of all dry locations. In respect of all wet locations the minimum thickness of the concrete over the stub- angle shall be 150mm.

The chimney top of muffing shall be 150 mm above ground level. However in case of foundations laid in paddy fields the snuffing shall be above the water level to be indicated by department. The size of the bottom portion of the foundation viz pyramid should be designed according to the nature of the sub-soil within the foundation.

CONCRETE: -

The cement used for the concrete shall be of approved brand and shall satisfy the requirement of the relevant ISS.

SAND: -

The sand used for the concrete shall be composed hard siliceous material. It shall be clean and of a sharp angular grit type and free from earthy or organic matter and deleterious salts. The sand shall pass through a B.S test. Sleeve no. 18 and be retained on test sleeve no 25.

AGGREGATE: -

The aggregate shall be of clean broken stone specified or approved by the department or his authorized representative. It shall be of hard closed grained quality. It shall also be as far as possible cube line, preferably angular, but not flick, perfectly clean and free from earth organic or other deleterious matter. Aggregate shall be broken to minimum size of 20 mm, & well graded for this sections of concrete like muffs around stubs, the aggregate size shall not be more than 20 mm.

WATER: -

The water used for mixing concrete shall be fresh clean & free from all acids and alkalis and shall be of quality fit for drinking purposed. Contaminated water shall not be used.

CONSISTENCY: -

The concrete should be mixed as stiff as the requirement of placing the concrete in the forms of moulds with ease and the degree to used should not be too much.

LAYING OF CONCRETE: -

Proper steel forms adequately breached to retain proper shapes while concreting should be used for chimney and pyramid portion. The forms should be made water tight, so that cream should not come out leaving sand and jelly. Forms shall be left in place until their removal is authorized by the department of his representative and shall then be removed with then be removed with care so as to avoid injury to the concrete. The stub angle shall be cleaned thoroughly to remove rust formation and painted with the cement paste made of 1 part of cement and 3 part of water (Cement slurry) to a thickness of 2mm before the cement is laid against the stub angles. The painting with the cement slurry shall be done each time to such a height so that concrete will be laid to that height before the cement wash become dry. Concreting shall be done on all four legs simultaneously. The concrete shall be laid in 150 mm, layers and consolidated well so that the cement cream works up to the top and no honeycombing is left in the concrete. After concreting the chimney portion to the require height the top surface should be finished smooth. When, the concrete is wet with a light slope towards the outer edge

to drain off the rainwater falling on the coping concreting to be done continuously. When one block is commenced, it could be completed in one continuous operation without break. In wet locations, the site must be kept completely de- watered both during the placing of the concrete and 24 hours after completion. There should be no disturbance to concrete by water during this period. The concrete after 24 hours lid shall be cured by keeping the concrete wet continuously for a period of fourteen days after laying. The pit may be backfilled with selected earth spring led with necessary amount of water & well consolidated in layers not exceeding 150 mm of consolidated thickness after a minimum period of 24 hours & there after both the exposed top & the fill shall be kept not the reminder of the prescribed time of 14 days.

APPENDIX: B

WASTAGE: -

1. Permissible wastage: -

- i) Conductor : - 3% Maximum (for Sag & Jumpering)
- ii) Earth wire : - 3% Maximum (for Sag & Jumpering)

2. Un Accountable Erection Wastage:-

- i) Conductor : - 2% Maximum
- ii) Earth wire : - 2% Maximum
- iii) Insulator : - 1% Maximum
- iv) Accessories : - 2% Maximum
- v) Nuts, Bolts & Washers : - 2% Maximum

APPENDIX: C

DETAILS INSTRUCTION TO THE TENDERER: -

- i) **The bidders must quote their rates in the prescribed price bidding schedule in the downloaded tender document otherwise the bid shall be treated as non-responsive and shall be liable for rejection**
- ii) The tender should complete in all respects as mentioned in the NIT must be submitted to this office in sealed cover.
- iii) The tender for the work should be accompanied by a deposit of earnest money in the form of **demand draft** in favour of TRIPURA STATE ELECTRICITY CORPORATION LIMITED on any schedule Bank payable at Agartala, West Tripura
- iv) TSECL reserves the right to reject any or all the tenders and even the lowest tender without assigning any reason.
- v) Any bidder who has been debarred / blacklisted by any Central (GOI) / State Govt. owned Power Utility, for similar nature of work during last 5 years for whatever reasons and thereby shall stand disqualified automatically at the very pre-qualification stage. **Therefore, the Bidder submitting the tender documents is liable to enclose a “Declaration” to this effect with due certification by “NOTARY” depicting full name & designation (As per Annexure – IV).**
- vi) The Bidder, including each of the partners of a joint venture, should provide information in separate sheet on any **history of litigation or arbitration** resulting from contracts executed in the last 5 (five) years or currently under execution **(As per Annexure – V).**
- vii) The successful tenderer shall be responsible for the completion and satisfactory execution of the work.
- viii) All equipments, loose materials like should be properly packed and sent to site.
- ix) The validity of offer shall not be less than 180 days from the date of opening of the tender.
- x) The contractor shall be responsible for packing delivery of all materials to work site for any loss or damage of materials contractor shall make good free of cost. Similarly demurrage and wharf charges shall be borne by the contractor.
- xi) INCOME TAX will be deducted in line with I.T. rules in force from the total contract value. The deduction shall be made from each running bill.
- xii) The contractor shall arrange at his own cost tools & other appliances required in full and proper execution of said work entrusted to him.
- xiii) All the works shall be carried out under direction and reasonable satisfaction of the TSECL.
- xiv) The TSECL may withhold for any payment for erection claimed by the contractor for loss account of
 - a) Defective work remedied for guaranteed not meet.
 - b) In adequate progress of work.
- xv) If the contractor neglects to execute the work with any reasonable orders given to him in written by this TSECL or his authorized representative in connection with the work the TSECL may given notice in writing to the contractor calling upon him to make good the failure, neglects, contravention complained of.
- xvi) During erection the contractor shall without any additional payment at all times keeps the working and storage areas used by him free from accumulations of waste materials or rubbish.
- xvii) The contractor shall employ at least one competent representative whose name(s) and shall previously being communicated in writing to the TSECL by the contractor.
- xviii) The route is to be followed as per survey conducted TSECL.
- xix) Bidders shall submit the hard copy of price bid neatly typed in excel format both in figures and in words. The total amount shall be indicated in the price bid both in figures and in words. Bidders shall also submit Soft copy of price schedule in CD for evaluation purpose. The CD in sealed condition shall be kept inside the price bid envelope.

PRICE BREAK-UP FOR SUPPLY: -

- a) Basic price : - Rs.
- b) Road Transport charges, including Loading at dispatch point, unloading inclusive of comprehensive insurance and other charges : - Rs.
- c) **Total** : - **Rs.**
- d) GST rate : -
- e) GST amount : - Rs.
- f) Discount if any on Rs..... : - Rs.
- g) Bidder should declare any other Taxes / duties not covered above and Amount, if applicable : - Rs.
- h) **Grand total** : - **Rs.**

PRICE BREAK-UP FOR CIVIL WORK, ERECTION & DISMANTLING WORK: -

- a) Basic price : - Rs.
- b) GST rate : -
- c) GST amount : - Rs.
- d) Discount if any on Rs..... : - Rs.
- e) Bidder should declare any other Taxes / duties not covered above and Amount, if applicable : - Rs.
- f) **Grand total** : -

Signature of the Tenderer / Bidder

**PROFORMA OF BANK GUARANTEE FOR
CONTRACT PERFORMANCE
(To be stamped in accordance with stamp Act)**

Ref.

Bank Guarantee No.

Date

To
The Dy. General Manager
Transmission Division
Tripura State Electricity Corporation Limited
Agartala.

Dear Sir,

In consideration of **Tripura State Electricity Corporation Limited** (hereinafter referred to as the 'Owner', which expression shall unless repugnant to the context or meaning there of include its successors, administrators and assigns) having awarded to M/s with its registered/Head office at(hereinafter referred to as 'Contractor' which expression shall unless repugnant to the context or meaning thereof, include its successors, administrators, executors and assigns), a Contract by issued of Owner's Letter of Award No.....dated.....and the same having been acknowledged by the Contractor, valued atfor(scope of contract) and the Contractor having agreed to provide a Contract Performance Guarantee for the faithful performance of the entire Contract equivalent tobeing 10% (Ten per cent) of the said value of the Contract to the Owner.

We, (Name & Address) having its Head Office at.....(hereinafter referred to as the 'Bank', which expression shall, unless repugnant to the context or meaning thereof, include its successors, administrators, executors and assigns) do hereby guarantee and undertake to pay the Owner, on demand any all monies payable by the Contractor to the extent ofas aforesaid at any time up to.....**.....(days / month / year) without any demur, reservation, contest, recourse or protest and/or without any reference to the Contractor.

Any such demand made by the Owner on the bank shall be conclusive and binding notwithstanding any difference between the Owner and the Contractor or any dispute pending before any Court, Tribunal, Arbitrator or any other authority. The Bank undertakes not to revoke this guarantee during its currency without previous consent of the Owner and further agrees that the guarantee herein contained shall continue to be enforceable till the Owner discharges this guarantee.

The Owner shall have the fullest liberty without affecting in any way the liability of the Bank under the guarantee, from time to time to extend the time for performance or the Contract by the Contractor. The Owner shall have the fullest liberty, without affecting this guarantee, to postpone from time to time the exercise of any powers vested in them or of any right which they might have against the Contractor, and to exercise the same at any time in any manner, and either to enforce or to for bear to enforce any covenants, contained or implied, in the Contact between the Owner and the Contractor or any other

course or remedy or security available to the Owner. The Bank shall not be released to its obligations under these presents by any exercise by the Owner of its liberty with reference to the matters aforesaid or any of them or by reason of any other act of omission or commission on the part of the Owner or any other indulgences shown by the Owner or by any other matter or thing what so ever which under law would, but for this provision have the effect of relieving the Bank.

The bank also agrees that the Owner at its option shall be entitled to enforce this guarantee against the Bank as a principal debtor, in the first instance without proceeding against the Contractor and not withstanding any security or other guarantee the Owner may have in relation to the Contactor's liabilities.

Notwithstanding anything contained herein above our liability under this guarantee is restricted toand it shall remain in force up to and includingand shall be extended from time to time for such period (not exceeding one year), as may be desired M/son whose behalf this guarantee has been given.

Dated this day of200..... At

WITNESS

.....
(Signature) (Signature)

.....
(Name) (Name)

.....
(Official Address) (Official Address)

Attorney as per Power
Of Attorney No. Date.....

APPLICATION FOR EXTENSION OF TIME

(Part – I)

1. Name of Contractor _____
2. Name of work (as given in the contract) _____

3. Agreement of _____
4. Estimate amount put to tender _____
5. Date of Commencement of work _____
6. Period allowed for completion of work (as per agreement) _____
7. Date of completion stipulated in the agreement _____
8. Period for which extension of time has been given previously if any _____
- a) 1st extension vide No. _____
- b) 2nd extension vide No. _____
- c) 3rd extension vide No. _____
- d) 4th extension vide No. _____
9. Period for which extension have been previously given (Copies of the previous application should be attached).
10. Hindrances on account of which extension is applied for with date on which hindrances occurred.

Sl. No.	Nature of hindrances	Date of occurrence	Period of which hindrances is likely to last	Extension of time applied for by the contractor	Overlapping period, if any, giving reference to items which overlap	Period for which extension is applied for.	Remarks as to why the hindrances occurred and justification for extension of time

11. Total period for which extension is now applied for on account of hindrances mentioned above.

12. Extension of time required for extra work: - _____ Months. _____ days.

13. Detailed for extra work and the amount involved: -

14.

a) Total value of extra work: -

b) Proportionate period of extension of time based on estimated amount put to tender on account of extra work: -

15. Total extension of time required for 11 & 12: -

16. The price shall remain Firm even during extended period whatsoever.

Signature of Contractor

APPLICATION FOR EXTENSION OF TIME

(Part – II)

(To be filled in by TSECL)

1. Date of receipt of application from _____
contractor for the work of _____
_____ in the Sub-Divisional
_____.
2. Acknowledgement issued by the Sr. Manager, vide his No. _____
_____ Dated _____.
3. Recommendation of Sr. Manager, in – charge of the Sub-Division is to whether the reasons given
by the Contractor are correct and what extension, if any, recommended by him, if he does not
recommended the extension, reasons for rejection should be given

Dated

Signature of the Sr. Manager in-charge of Sub-Division.

APPLICATION FOR EXTENSION OF TIME

(Part – III)

(To be filled in by TSECL)

1. Date of receipt in the Divisional office: _____
2. Report of DGM, in-charge of the Division regarding hindrances mentioned by the contractor

Sl. no.	Nature of hindrances	Date of occurrence	Period for which hindrances is likely to last	Extension of time applied for by the contractor	Overlapping period, if any, giving reference to items which overlap	Net extension applied for	Remarks as to why the hindrances occurred and justification for extension recommended

3. Recommendation / Approval of the DGM, in-charge of the Division: -
(The present progress of work should be stated and whether the work is likely to be completed by the date upto which extension is applied for, if extension of time is not recommended, what compensation is proposed to be levied under **clause 13 of section – III**.)

Signature of DGM

4. Recommendation / Approval of the AGM, in-charge of the Circle: -

Signature of AGM

5. Recommendation / Approval of the GM (Technical): -

Signature of GM (Technical)

6. Recommendation / Approval of the CMD: -

Signature of CMD

ANNEXURE – IV

(TO BE SUBMITTED WITH DUE ATTESTATION BY NOTARY IN COVER NO.1)

Refer NIT No. _____ Date _____

**To
The Deputy General Manager,
Transmission Division,
Tripura State Electricity Corporation Limited,
Agartala.**

Declaration

Sir,

I / We hereby on behalf of (the name of the Vendor / Firm.....) declare that we are not “De-barred/Black listed” by any Central (GOI) / State Govt. owned Power Utility, for similar nature of work during last 3 (three) years for whatever reasons.

Yours faithfully

Date:.....

(Signature of the Tenderer)
With rubber Stamp

Attestation Signature of Notary
With Rubber Stamp

Date:

Litigation History

Name of the Bidder:

Year	Award FOR or AGAINST Applicant	Name of client, cause of litigation and matter in dispute	Disputed amount

(Signature of the Tenderer)
With rubber Stamp

MAKERS LIST OF MATERIALS

Sl. No.	Items	Manufacturer
1.	Structural Steel	Re-rollers shall purchase Billets from SAIL / TISCO / RINL / ISCO / VIZAG / Other reputed manufacturer having credentials of supplying to different Central / State power utilities.
2.	Nuts & bolts and other hardwares	Reputed manufacturer having credentials of supplying to different Central / State power utilities.
3.	ACSR PANTHER conductor of size 30/7/3.0 mm	APAR Industries / Saravathi Conductor / Sterlite Industries / Smita Conductor / Cabcon India Pvt. Ltd./ Lumino Industries Ltd / Reputed manufacturer having credentials of supplying to different Central / State power utilities.
4.	7/3.15 mm galvanized Steel Stranded Wire of Gr. – III conforming to ISS: 2141 of 1979 of as amended latest	Reputed manufacturer having credentials of supplying to different Central / State power utilities.
5.	Hardware fittings	EMI / Rashtraudyog Ltd. / Electromech & Transtech / EMC LTD / IAC / Klemmen / Megha / IPS / TLP
6.	Disc Insulator (11 KV Disc Insulator of size 255 mm X 145 mm Ball & Socket type EMS 120 KN)	Aditya Birla Insulators Ltd. / BHEL / IEC / WSI / Reputed manufacturer having credentials of supplying to different Central / State power utilities.
7.	40 mm dia G.I. Pipe	TATA / BANSAL / BMW / JINDAL.

Section – VI
Price Bidding Schedule

Group – A (Supply): -

(Rate & amount in Rs.)

Sl. No.	Description of item	Quantity	Unit	Rate	Amount
1.	Galvanized Steel structure for tower				
	a) Stub including cleat (Set of four) & partly painted at below ground level.	6.922	MT		
	b) Super Structure	126.782	MT		
2.	Accessories for tower				
	a) Phase Plate (size 10 cm dia) (set of three R, Y, B)	21	Set		
	b) Danger Plate (size 30 X 20 cm) made of 18 SWG thick.	11	No.		
	c) Number Plate (size 15 X 10 cm)	11	No.		
	d) Anti Climbing Devices – (15 kg set consisting for each tower)	11	Set		
	e) G.I. Barbed wire	0.703	MT		
3.	Galvanized iron made nuts & bolts, spring washer, flat washer, 'D' shackle & 'U' bolts of required sizes.	4.321	MT		
4.	ACSR 'PANTHER' conductor of size 30/7/3.00 mm as per IS: 398 (P – II) / 1996 and as amended up to date.	9.45	KM		
5.	Hardware for conductor: - Conductor accessories suitable for ACSR 'PANTHER' conductor of size 30/7/3.00 mm				
	a) Mid span joint	10	No.		
	b) Compression type repair sleeve	10	No.		
	c) Stock bridge type vibration damper	138	No.		
	d) Parallel groove clamp with nuts, bolts & washers etc. (Dog-Panther)	12	No.		

(Rate & amount in Rs.)

Sl. No.	Description of item	Quantity	Unit	Rate	Amount
6.	7/3.15 mm galvanized steel stranded wire of Gr.III conforming to ISS: 2141 of 1979 of as amended latest.	1.68	KM		
7.	Hardware for Earth wire: - Earth wire hardware suitable for 7/3.15 mm galvanized stranded steel wire.				
	a) Compression type joint	4	No.		
	b) Tension clamp for angle location '2-U' bolted type	25	No.		
	c) 16 mm dia 'D' shackle.	25	No.		
	d) Stock bridge type vibration damper	25	No.		
	e) Parallel groove clamp with nuts, bolts & washers etc.	14	No.		
	f) Compression type galvanized stranded steel lug (Earth bond).	24	No.		
8.	11 KV Disc insulator of size 255 mm X 145 mm, ball & socket type EMS 120 KN with 20 mm dia ball complete with W/R clips (Zinc).	2121	No.		
9.	Hardware for Insulator: -				
	a) Accessories for 10 Disc single tension insulator string.	69	Set		
	b) Accessories for 10 Disc double tension insulator string.	60	Set		
10.	Earthing set, pipe type consisting of 40 mm hot dip G.I. Pipe 3 mtr. long perforated, galvanized 50 X 6 mm steel flat 2.5 mtr. long 1 piece 450 mm long another piece in 'L' shape complete with G.I. Nuts, bolts, washer as required.	11	Set		
	Total of Group – A (Supply)				

Group - 'B' (Civil works): -**(Rate & amount in Rs.)**

Sl. No.	Description of item	Quantity	Unit	Rate	Amount
1.	Mobilization of all equipment and accessories personal etc. and cost of demobilization of the same after completion of work including cost of setting up camp sinking 1.50 mm dia bore hole through all types of soil (excluding boulder & rock) by shell and auers with full length flash joint casing (as per I.S.) conducting standard penetration test as per standards at an interval of 1.0 to 1.5m for logging purpose collection of undisturbed soil sample at an interval of 2.5 to 3.0m from cohesive and party cohesive deposit up to termination depth including shifting of equipment from one bore hole to other bore hole conducting routine laboury test like grain size LL, P, NMC, sp. Gravity Tri-axial / direct shear test consideration test chemical analysis on UDS & SPT soil samples as per standard specification preparation and submission of final report (6 copies) including suitable recommendation of safe bearing capacity for different type of foundation completes.	80.00	Mtr.		
2.	Original survey of transmission route alignment which shall include following sequential schedule of sub items. The works to be carried out as per standard of transmission line otherwise specified and directed by Engineer-In-Charge. (Scale: R.F. = 1:200).				
	a) Preliminary survey which includes road alignment better accessible transportation road, details report preparation & submission etc. thereof.	1.60	Km		
	b) Route survey with details of alignment angle & direction thereof including necessary jungle cutting & preparation of alignment plan etc.				
	c) Preparation of profile plan and "L" section etc. & submission thereof.				
	d) Providing & fixing of necessary "T" shape RCC pillar of 1 : 2 : 4 etc.				

(Rate & amount in Rs.)

Sl. No.	Description of item	Quantity	Unit	Rate	Amount
3.	Check survey during foundation work.	1.60	Km		
4.	Earth work in excavation over areas exceeding 30 cm in depth 1.5 m in width as well as 10 sqm. on plan in/c. disposal of excavated earth lead up to 50m and lift up to 1.5 m disposed earth to be leveled and neatly dressed. a) All kinds of soil	650.00	Cum		
5.	Earth work in excavation in foundation trenches not exceeding 1.5 m in width or 10 sqm. on plan or drains not exceeding 1.5 m in width or 10 sqm. on plan in/c. dressing of sites and ramming of bottoms lift up to 1.5 m. in/c. getting out the excavated soil. a) All kinds of soil.	1369.55	Cum		
6.	Filling in plinth with sand under floors in/c. watering, ramming, consolidating and dressing complete.	35.598	Cum		
7.	Providing & laying cement concrete 1 : 3 : 6 (1cement : 3 river sand : 6 stone aggt. of 20 mm nominal size) excluding the cost of centering and shuttering in. (a) Foundation and plinth	59.528	Cum		
8.	Setting of stubs (Set of four) including centering, leveling etc. with the help of template as required.				
	a) 'B' – type (Angle tower)	2	Set		
	b) 'C' – type (Angle tower) & Special Tower (C + 18)	9	Set		
9.	Cold twisted steel reinforcement for RCC work in/c. bending, binding, placing in position complete.	16.78	MT		

(Rate & amount in Rs.)

Sl. No.	Description of item	Quantity	Unit	Rate	Amount
10.	Providing RCC work 1 : 2 : 4 (1 Cement : 2 River sand : 4 stone aggregate of 20 mm nominal size) including finishing & plastering the exposed surface with cement mortar 1 : 3 (1 cement : 3 river sand) thickness not exceeding 6 mm to give a smooth and even surface including supply of cement, sand and stone aggregate 20 mm nominal size centering, shuttering, propping, dewatering etc. as required and excluding the cost of M.S. rod but including removal of performed steel from boxes and back filling of excavated earth, dressing, ramming etc. as required.	471.450	Cum		
11.	Boring, providing and installation bored cast-in-situ reinforced cement concrete piles of grade M-25 of specified diameter and length below the pile cap, to carry a safe working load not less than specified, excluding the cost of steel reinforcement but including the cost of boring with bentonite solution and temporary casing of appropriate length for setting out and removal of same and the length of the pile to be embedded in the pile cap etc. by percussion drilling using Direct Mud Circulation (DMC) or Bailer and Chisel Technique by Tripod and Mechanical Winch Machine all complete, including removal of excavated earth with all its lifts and leads. (Length of pile for payment shall be measured up to bottom of pile cap). Note: Truck Mounted rotary / TMR / Tube well Boring Machine shall not be used.				
	600 mm dia piles.	1368.00	Meter		
12.	1 st class brick work in foundations and plinth in cement mortar 1 : 6 (1 cement : 6 river sand).	65.75	Cum		
13.	12 mm cement plastering work 1 : 6 (1 cement : 6 river sand) including neat cement punning.	225.65	Sqm.		
Total of Group - B (Civil work)					

Group – C (Erection): -

(Rate & amount in Rs.)

Sl. No.	Description of item	Quantity	Unit	Rate	Amount
1.	Super structure erection including fixing up Danger plate, Number plate, Phase plate, step bolt, Bird guard, Anti climbing devices including tack welding of bolt up to lower level of bottom cross arm to complete in all respect as required for all type of towers including extension portion.	131.103	MT		
2.	Hoisting of insulators and stringing of ACSR "PANTHER" conductor of size 30/7/3.0 mm including laying, stringing, tensioning, clamping and jointing etc. per route KM in 6 (six) conductor and including fixing of vibration damper, armour rod etc. including clearing of jungles, bushes & trees (all girth) 3 mtr. and maximum of 12 mtr. on either sides from the end conductor depending upon site condition / requirement as per direction of Engineer -in-charge.	1.3	CKM		
3.	Stringing of 7/3.15 mm galvanised stranded steel earth wire including laying, stringing, tensioning, clamping and jointing per KM of earth wire including connection of earth bonds two nos. in angle location and one no. in tangent locations.	1.6	KM		
4.	Grounding of tower with perforated Hot dip G.I. pipe and 50 X 6 mm G.I. Flat including the cost of charcoal and salt per set as per specification.	11	Set		
Total of Group – C (Erection)					

Group - 'D' Dismantling, re-stringing and handing over of materials): -

(Rate & amount in Rs.)

Sl. No.	Items	Quantity	Unit	Rate	Amount
1.	Dismantling of ACSR 'PANTHER' conductor per route Km of 6 (six) conductors from existing tower and handing over to the Sr. Manager, 132 KV Grid Sub-station, 79 Tilla, Agartala.	0.92	CKM		
2.	Dismantling of Disc insulator from existing tower and handing over to the Sr. Manager, 132 KV Grid Sub-station, 79 Tilla, Agartala.	528	No.		
3.	Dismantling of 7/3.15 mm earth wire from existing tower and handing over to the Sr. Manager, 132 KV Grid Sub-station, 79 Tilla, Agartala.	1.32	KM		

(Rate & amount in Rs.)

Sl. No.	Items	Quantity	Unit	Rate	Amount
4.	Dismantling of galvanized steel materials of tower and handing over to the Sr. Manager, 132 KV Grid Sub-Station, 79 Tilla, Agartala.	12.80	MT		
5.	Dismantling of ACSR 'DOG' conductor per route Km of 3 (three) conductors from existing tower and handing over to the Sr. Manager, 66 KV Badharghat Sub-station, Agartala.	0.402	RKM		
6.	Hoisting of insulators and stringing of ACSR "DOG" conductor including laying, stringing, tensioning, clamping and jointing etc. per route KM. In 3 (three) conductor and including fixing of vibration damper, armour rod etc. including clearing of jungles.	0.20	KM		
	Total of Group – D (Dismantling, re-stringing and handing over of materials)				

N.B.: - The bidders must quote their rates in the prescribed price bidding schedule in the downloaded tender document otherwise the bid shall be treated as non-responsive and shall be rejected. No other price schedule framed by the bidder shall be accepted by TSECL and it shall be rejected.

DECLARATION

I / We hereby declare that I / we have personally gone through the Bid-Documents of Contract, Technical Specifications, other instructions / Special instructions etc. incorporated in the Bidding Document for the works / Supply and I / We do agree to abide by all the rules and regulations of TSECL.

SIGNATURE OF THE TENDERER / BIDDER