



DNIT

Office of the Deputy General Manager,

Capital Complex Electrical Division, 79 Tilla,

NIT No: - DGM/ EDCC/ 2023-24/23 dated 23.02.2024.

Name of Work: - Extension of H.T/L.T XLPE U.G Cable line including construction of a 200 KVA Distribution Sub-Station for providing of a service connection to the newly constructed Composite Building for accommodation of different office of PWD at Capital Complex, Khejurbagan, Agartala under ESD- Capital Complex.(Demand Load-138.104). (RCC Base Transformer Sub-Station to be Construction by PWD Department as per rule of TSECL).

Estimated Cost: - ₹ 9,99,094.00

Earnest Money: - ₹19,982.00

Cost of Bid Document: - ₹ 4720.00 (Including GST)

Time for Completion: - 3(three) Month.

The document contains **153 (One Hundred fifty three)** pages excluding back Cover Pages.

Deputy General Manager
Electrical Division – Capital Complex
TSECL, Agartala. West Tripura.



SECTION-I

TRIPURA STATE ELECTRICITY CORPORATION LIMITED

(INVITATION OF DOMESTIC COMPETITIVE BIDDING)

NOTICE INVITING TENDER FOR “Extension of H.T/L.T XLPE U.G Cable line including construction of a 200 KVA Distribution Sub-Station for providing of a service connection to the newly constructed Composite Building for accommodation of different office of PWD at Capital Complex, Khejurbagan, Agartala under ESD- Capital Complex.(Demand Load-138.104). (RCC Base Transformer Sub-Station to be Construction by PWD Department as per rule of TSECL).”

INTRODUCTION:-

The Executive Engineer, PWD, Agartala approached TSECL for Extension of H.T/L.T XLPE U.G Cable line including construction of a 200 KVA Distribution Sub-Station for providing of a service connection to the newly constructed Composite Building for accommodation of different office of PWD at Capital Complex, Khejurbagan, Agartala under ESD- Capital Complex.(Demand Load-138.104). (RCC Base Transformer Sub-Station to be Construction by PWD Department as per rule of TSECL).The requisitioning authority deposited the necessary fund for the work.

The work involves supply and erection of, HDPE Pipe, XLPE cables, cable end joints and T shape pillar etc. as required completing the job.

SCOPE OF WORK:

The Scope of work covered under this package includes “Extension of H.T/L.T XLPE U.G Cable line including construction of a 200 KVA Distribution Sub-Station for providing of a service connection to the newly constructed Composite Building for accommodation of different office of PWD at Capital Complex, Khejurbagan, Agartala under ESD- Capital Complex.(Demand Load-138.104). (RCC Base Transformer Sub-Station to be Construction by PWD Department as per rule of TSECL). The detailed scope has been described in the technical specification & price bidding schedule attached with this bidding document.



Bid Document download	www.tsecl.in
Bid Receipt time and date	: 04/02/2024 (up to 2:00 p.m.)
Bid opening time and date (Price Bid)	: 04/02/2024 (at 3:30 p.m.)(If possible)
Cost of bidding document	: ₹ 4720.00 (Including 18% GST)
Estimated Cost	: - ₹ 9,99,094.00 (Including GST)
Earnest Money	: ₹19,982.00
Completion Period	: 2 (two) months.

2.0 QUALIFYING REQUIREMENTS FOR BIDDERS :-

- 2.1 The bidder must have supplied, laid and commissioned minimum **0.10 KM of 11 KV voltage class U.G Cable line in a single award and which is in** successful operation for at least **1 (One) year** prior to submission of bid as per NIT.
- 2.2 **The minimum average annual turnover of the bidder for the last three years shall be not less than 30% of the estimated cost put to tender and the bidder must have his GST Registration.**(proof in respect to GST ID & GSTN address to be provided along with Part-I bid)
- 2.3 Bids may be submitted by an individual firm (proprietorship entity) with relevant experience or registered partnership firm or companies registered under companies act or joint ventures of registered firms/companies/ proprietorship entity with two constituents only as one of the following.
- 2.4 A single firm of proprietorship entity or registered partnership firms or companies registered under Companies Act, which meets the requirements, indicated in para 2.1, 2.2 above.
- 2.5 A joint venture of two registered firms/companies/ proprietorship entity, wherein all registered firm/company/ proprietorship entity shall meet any one, both or all the requirements of para 2.1& 2.2 above for each partner.
- 2.6 The figures of average annual turnovers for each registered firm/company/ proprietorship entity shall be added together to determine the bidder's compliance with the minimum average annual turnover requirement for the package as given at Para 2.3 above.
- 2.7 All partners of Joint Venture shall be **liable jointly and individually /**



- severally** for the execution of the contract in accordance with the contract terms.
- 2.8** The Contractor shall mandatorily obtain the registration under GST Law at Central level and / or in respective state as may be required. Further the Contractor shall mandatorily file returns under GST before their due date & comply with the requirement of the law. TSECL will ensure that the contractor has complied with all the required statutory requirements under GST.
- 2.9** Notwithstanding anything contained herein above, TSECL reserves the right to assess the “capacity and capability” of the bidder to execute the work.
- 2.10** In addition to the mandatory requirements as specified in Para 2.1, & 2.2 the following criteria must need to be fulfilled for the Bidder / Lead Partner for this package.
“The bidders who are engaged in TSECL and other Power Utilities in different works or who have completed the works within 5 year or less, they shall submit the performance for each recent ongoing works and work completed within 5 years. The bidder who have done work in TSECL and other state Power Utilities before 5 years but they are not doing any similar works within any State Power Utilities, they are not eligible for submitting the bid. The bidder must submit the certificate from the respective controlling Officer not below the rank of DGM/ Ex. Engg and submission of which is mandatory along with bid or before Pre bid discussion date. Any unsatisfactory performance report will be treated as disqualification of bid”. **Experience certificate of sub-contract work under any contractor shall not be accepted.**
- 2.11** The bidder’s offer must include the following documents to be submitted with technical bid,
- (i) Copies of original documents defining the constitution or legal status, place of registration and principal place of business, Authorization / Power of attorney in favour of authorized signatory for signing of documents and submission of bid with the following information:-
- 1 Name & address of authorized signatory.
 - 2 Telephone no / Fax no, Mobile No and E mail ID.
 - 3 Copy of Partnership deed in case of partnership firm, Memorandum and Article of Association in case of limited company, Ownership certificate in case of sole or proprietary firm and Power of Attorney in favour of authorized signatory in case the firm is not a proprietary



- firm.
- (ii) **Photocopy of Current Income-tax challan / Return, GST registration No; PAN No, Labor License Declaration and EPF Registration no of bidder / all partners of joint venture.**
 - (iii) Successful completion certificate issued by an Engineer not below rank of Executive Engineer/Deputy General Manager in charge along with supporting photocopies of work order /LOA for the work executed in any 1(one) year out of last 5 financial years. Bidders shall provide details of work of similar nature executed or under execution during last 1 year in the following format.

(iv)

SL. No.	Description of work of similar nature	Client Name with LOA Ref. No. & Date	LOA Value (in Lakhs)	Amount obtained till date (in Lakhs)	Schedule completion time	Actual Completion time	Brief Reason of delay

- (v) Major items of construction equipment proposed to carry out the contract.
- (vi) Details of proposed manufacturer's of material/equipment and erection agencies are to be submitted with the bid.
- (vii) Qualifications and experience of key site management and technical personal proposed for the contract.
- (viii) Reports on the financial standing of the bidder, such as Profit and loss account & balance sheets and Auditor's reports etc. for the financial years **2020-21, 2021-22 and 2022-23,**
- (ix) Evidence of adequacy of working capital and access to line(s) of credit and availability of other financial resources from the scheduled commercial Bank.
- (x) Authority to seek reference from the Bidder's Bankers (as per format enclosed).
- (xi) Financial Turnover should be as per the published audited annual report of the company/ bidder/partners of joint venture along with PAN card (individual / organization).
- (xii) Contractor's license & supervisory certificate of competency for requisite parts.



- (xiii) The bidder shall not have been debarred from business by any PSU /Govt Deptt during the last 3 years. Self declaration in this regard to be provided along with the bid.
- (xiv) Bidder shall be liable to follow the terms and condition of the NIT otherwise the bid shall be summarily rejected.
- (xv) Photocopies of all documents furnished shall be self-authenticated and duly stamped.

2.12 TSECL reserves the right to check the originals, if required.

- 3.0** The Bid Document complete with **general condition of contract, technical specification, schedule of quantities & drawings of equipment foundation & bill of materials for equipment support structures etc.** may be seen in the office of the **Deputy General Manager, Capital Complex Electrical Division, 79 tilla, Agartala, Tripura (W)**, on all working days during office hours upto the date fixed for sale of bid documents.
- 4.0** 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.
- 5.0** The bidder shall furnish documentary evidence in support of the qualifying requirements stipulated above along with their bid. Bid received without such documents shall be summarily rejected.
- 6.0** The bidder shall be required to deposit earnest money @ **2.0 %** of the estimated cost put to tender subject to maximum of **Rs.5.00 lakh** in the shape of **demand draft** or Banker Cheque from any scheduled bank guaranteed by Reserve Bank of India favoring **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 Guaranty**.

The successful bidder on award of work shall have to deposit a **Contract Performance Guaranty** equivalent to **10% of LOA** value, from any scheduled bank guaranteed by Reserve Bank of India payable at Agartala or **in the shape of Bank Guarantee (BG)** from a **Public Sector / Scheduled Indian Bank guaranteed by Reserve Bank of India as per normal format** in favour of **TRIPURA STATE ELECTRICITY CORPORATION LIMITED** in the shape of **Bank guarantee**.



Contract Performance Guaranty shall be released after successful operation for at least **18 (Eighteen) calendar months countable** from the date of commissioning of the work.

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

- 7.0 The bidding documents are not transferable and cost of bidding document is not refundable under any circumstances.
- 8.0 The original Bidding document shall be signed by the bidder(s) on all pages and will be enclosed with the Price bid containing “Schedule of workd” **(Schedule-A)**. All corrections to rates and items in the Bid(s) should be initialed by the Bidder(s).
- 9.0 The Bidder(s) shall have to give a DECLARATION that he/they have gone through the details of the Bidding Document(s) as per format appended with the Bidding Document.
- 10.0 Address for Communication / Purchase of Bid Document.

Deputy General Manager
Capital Complex Electrical Division
79 tilla, Agartala, Tripura (W)



1. Addendum/amendments/corrigendum:

Before the last date for submission of Tenders, the TSECL may modify any of the Contents of the Tender Notice, Tender documents by issuing amendment / Addendum/corrigendum.

Any addendum/ amendments/ corrigendum issued by the TSECL shall be part of the tender Document and it shall be published in the e-procurement portal at **<http://www.tsecl.in>**. Registered Bidders shall be notified of the related Corrigendum(s) by e-mail. However, TSECL shall bear no responsibility or liability arising out of non-receipt of the same in time or otherwise. Bidders are requested to visit the site frequently to check whether there is any related Corrigendum(s) or not.

2. TSECL reserves the right to cancel/withdraw this invitation for bids without assigning any reason and shall bear no liability whatsoever consequent upon such a decision.

Dy. General Manager,
Capital Complex Electrical Division,
79 Tilla, Agartala, West Tripura



SECTION 1: INSTRUCTIONS TO BIDDERS

1.1 Introduction

This part, Instruction to Bidders (ITB), Section-1 of the Bidding Documents provides the information necessary for bidders to prepare responsive bids for “Extension of H.T/L.T XLPE U.G Cable line including construction of a 200 KVA Distribution Sub-Station for providing of a service connection to the newly constructed Composite Building for accommodation of different office of PWD at Capital Complex, Khejurbagan, Agartala under ESD- Capital Complex.(Demand Load-138.104). (RCC Base Transformer Sub-Station to be Construction by PWD Department as per rule of TSECL). It also provides information on bid submission, opening and evaluation and on contract award. ITB contains provisions that are to be used unchanged unless part Special Condition of Contract, which consists of provisions that supplement, amend, or specify in detail, information or requirements included in ITB and that are specific to each procurement, states otherwise. If there is a conflict between the provisions of ITB & Special Condition of Contract, the provisions of Special Condition of Contract shall prevail.

However, provisions governing the performance of the Contractor, payments under the contract or matters affecting the risks, rights and obligations of the parties under the contract are not included in this section but instead under Section -6: General Conditions of Contract and/or Special Conditions of Contract.

The TRIPURA STATE ELECTRICITY CORPORATION LIMITED (TSECL)/TSECL hereinafter called 'Owner' will receive bids in respect of equipment to be furnished and erected as set-forth in the accompanying Specifications. All bids shall be prepared and submitted by bidders in accordance with these instructions.

1.2 General Instructions

- i) The interested bidder can download the bidding document from the website <http://tsecl.in>.
- ii) Bidders are advised to download bid submission manual for the help of Bid Submission process from the “Downloads” option as well as from “Bidders Manual Kit” on website <http://tsecl.in>.
- iii) To participate in bidding process, bidders have to get ‘Digital Signature Certificate (DSC)’ Class 2/Class 3 as per Information Technology Act-2000, to participate in online bidding.

The bidders have to submit their bids online in electronic format with digital Signature. This certificate will be required for digital signing the bid. Bidders can get above mention digital certificate from any approved vendors. The Bidders, who already possess valid Digital



Certificates, need not to procure new Digital Certificate. The bids proposed without digital signature will not be accepted. No proposal will be accepted in physical form.

- iv) Bids will be opened online as per time schedule mentioned in the NIT Document.
- v) Before submission of online bids, bidders must ensure that scanned copy of all the necessary documents have been attached with bid.

(Note: Scan all the documents on 100 dpi with black and white option).

- vi) The Owner will not be responsible for delay in online submission due to any reasons.
- vii) All the required information for bid must be filled and submitted online up to 0/08/2022, 14:00hrs.
- viii) The Quoted rates shall be **"FIRM"** inclusive of all taxes and duties, freight, transportation, insurance etc. as the work is a turnkey job. The rates shall include costs, if any, attracted towards mandatory inspection/testing by designated agencies and the department will not be required to pay and/or reimburse anything over and above the price quoted. The estimated cost (Table -1 of NIT) is purely tentative.
- ix) The details of cost of documents, EMD specified in the SBD should be the same as deposited online otherwise tender will summarily be rejected.
- x) Bidders are advised not to make any change in BOQ (Bill of Quantities) contents or its name. In no case they should attempt to create similar BOQ manually, otherwise the bid will be rejected automatically. The BOQ downloaded should be used for filling the rates as per columns mentioned in BOQ and it should be saved with the same name as it contains.
- xi) Bidders are advised to use "My Document" area in their user on <http://tsecl.in>
E-Tendering portal to store important documents which are used in all SBD's like Tax Clearance Certificate, Contractor license, Experience certificate etc. and attach these certificates as Non-Statutory documents while submitting their bids.
- xii) The guidelines regarding submission of bid online can be downloaded from website <http://tsecl.in>.

1.3 Eligibility of Bidder

This Invitation for Bids, issued by Owner is open to all firms, Government Owned Enterprises registered and incorporated in India as per Company Act, 1956 barring Government department as well as foreign bidders/MNCs not registered and incorporated in India and those bidders with whom business is banned by any Power Utility- central or state/DISCOMS/any other authority shall not be allowed for bidding.



The documentary evidence of the Bidder's qualifications to perform the contract, if its bid is accepted, shall establish to the Owner's satisfaction that the Bidder has the financial, technical, production, procurement, shipping, installation and other capabilities necessary to perform the contract, and, in particular, meets the experience and other criteria outlined in Section – 2 and shall also include the complete annual reports together with Audited statement of accounts of the company for last Three years of its own (separate) immediately preceding the date of submission of bid.

1.4 Eligible Plant: Equipment and Services

For the purposes of these Bidding Documents, the words "facilities," "plant and equipment," "installation services," etc., shall be construed in accordance with the respective definitions given to them in the General Conditions of Contract.

All plant and equipment to be supplied and installed and services carried out under the contract shall have their origin in India only.

1.5 Cost of Bidding

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

1.6 Bid Document

1.6.1 Cost of Bidding Document:

The bidder shall bear all costs associated with the preparation and submission of its bid and Tripura State Electricity Corporation Limited, Owner hereinafter referred to as "Owner", will in no case be responsible or liable for these costs, regardless of the conduct or outcome of the bid process

This SBD is available on the web site **<http://tsecl.in>** to enable the bidders to view, download the bid document and submit bids online up to the last date and time mentioned in e-Tender notice/e-tender document against this e- Tender. The bidders shall have to pay the bid document fee of **Rs. 1,180.00.00 (Rupees one Thousand one hundred eighty Only)** through electronically using the Online Payment Facility provided in the Portal. This e-tender document fee will be non- refundable.



1.6.2 Contents of Standard Bidding Document:

The Bid document includes submission of following documents in stages:

Stage-1: Preliminary Qualification and Techno commercial Details:

- (a) **Copy of GST Registration and Clearance certificate of GST for last Quarter**
- (b) **Copy of PAN Card**
- (c) **Copy of EPF registration certificate & Labour License to be submitted with latest challan copy**
- (d) **Copy of Experience/Completion Certificate**
- (e) **Copy of Electrical Contractor License and supervisory certificate of competency for require parts**
- (f) **Copy of balance sheet (Audited by Chartered Account) with Auditor Certificate in support of Annual Turnover i/c IT Return Certificate for the last 3(three) years of session 2020-21, 2021-22 and 2022-23 as per 2.3 of section-2)**
- (g) **Copy of Company Registration**
- (h) **Electrical Enlistment**
- (i) **Blacklisted or Debarred declaration:** - Any bidder who has been debarred / Black listed by any Central (GOI)/ State Govt. owned Power Utility for works of similar type during 3 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 enclosed a declaration to this effect with due certification by "NOTARY" depicting full name & designation (As per Format annexed in Bid Document).
- (j) **Technical Data Sheet/GTPs and drawings for major items specified in the Bid Document in PDF**
- (k) **The bidder must have submitted an undertaking that he will procure all the materials from TSECL approved vendor list which will be available at www.tsecl.in**

** Successful Experience / completion certificate shall be issued by LOA issuing authority / Agreement signing authority as per Form in the SBD (Clause 5.4 Form-IV) along with supporting photocopies of work order / LOA of the work executed in last 7 financial years.

*** Photocopies of all documents shall be furnished self-authenticated and duly stamped.

Techno-Commercial Details:



- (a) Section 1: Instruction to bidders (ITB);
- (b) Section 2: Pre-Qualification Criteria;
- (c) Section 3: General Conditions of Contract;
- (d) Section 4: Special Conditions of Contract;
- (e) Section 5: Standard Bidding Format;
- (f) Section 6: Erection Conditions of Contract;
- (g) Section 7: Payment Terms;
- (h) Section 8: Price adjustment;
- (i) Section 9: Scope of Work;
- (j) Section 10: Detailed Technical Specification with GTP;

**** Bidders are requested not to upload any irrelevant documents other than specified in bid documents.**

Stage-2: Price Schedule

NOTE: The financial bid shall be submitted online only and the hard copy of the same shall not be considered in any case.

1.6.3 Understanding of bid documents:

A prospective Bidder is expected to examine all instructions, forms, terms, technical specifications, tender drawings and scope of works in the bid 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 in the bid document or submission of a bid not responsive to the bid document in every respect will be at the Bidder's risk and may result in the rejection of the said e- Bid.

1.6.4 Clarifications on Bid Documents; and Pre-bid Meeting:

If the prospective Bidder finds discrepancies or omissions, in specifications and document or is in doubt as to the true meaning of any part, he shall at once make a request, in writing, for an interpretation/clarification, to Owner at his mailing address indicated in Bidding Documents. Similarly, if a Bidder feels that any important provisions in the documents, such as Governing laws, Taxes and Duties, Defect Liability, Limitation of Liability, Settlement of Disputes, Arbitration, Form of Contract Agreement, Price Adjustment, Bid Guarantees, Contract Performance Guarantee, Compensation for Delay, Payments Terms, Schedule of Execution/Completion of works, will be unacceptable, such an issue should be raised as above. Owner, then, will issue interpretation(s) and clarification(s) as he may think fit in



writing or modification of the Bidding Documents that it receives no later than Three (03) days prior to date of Prbid meeting. The Owner shall not be obliged to respond to any request for clarification received later than the above period. Further, mere request for clarification received from the Bidder shall not be a ground for seeking extension in the deadline for submission of bid. Written copies of Owner's response (including an explanation of the query but not identification of its source) will be sent to all prospective bidders. Verbal clarification and information given by Owner or his employee(s) or his representative(s) shall not in any way be binding on Owner.

1.6.5 Local Conditions:

It will be imperative on each Bidder to fully inform himself of all local conditions and factors, which may have any effect on the execution of the Contract covered under these documents and specifications. Owner shall not entertain any request for clarifications from the Bidders, regarding such local conditions. It must be understood and agreed that such factors have properly been investigated and considered while submitting the Proposals. No claim for financial adjustment to the Contract, awarded under these specifications and documents, will be entertained by Owner. Neither any change in the time schedule of the Contract nor any financial adjustments arising thereof shall be permitted by the Owner, which are based on the lack of such clear information or its effect on the cost of the Works to the Bidder.

The bidder's designated representative(s) is / are invited to attend a prbid meeting, which, when convened, will take place at the venue and time specified in the bidding Documents. The purpose of the meeting shall be to clarify any issue regarding the bidding Documents in general and the Technical Specifications in particular. The Bidder is requested, as far as possible to submit any question in writing, to reach the Owner not later than Three (03) days before the meeting. Minutes of the Meeting, including the text of the questions raised (without identifying the name of the bidders) and the responses given, together with any responses prepared after the meeting, will be uploaded on the website <http://tsecl.in> through corrigendum and shall form an integral part of bid document.

Non-attendance at the prbid meeting will not be a cause for disqualification of a bidder.

1.6.6 Amendment to bid Document:

At any time prior to the deadline for submission of bid, the Owner may, for any reason, whether at its own initiative or in response to a clarification requested by a prospective Bidder, modify the bid Document by amendments. Such amendments shall be uploaded on the website "<http://tsecl.in>" through corrigendum and shall form an integral part of bid



document. The relevant clauses of the e- Bid document shall be treated as amended accordingly.

It shall be the sole responsibility of the prospective bidders to check the web site "<http://tsecl.in>" from time to time for any amendment in the e-tender document. In case of failure to get the amendments, if any, the Owner shall not be responsible for it.

In order to allow prospective bidders a reasonable time to take the amendment into account in preparing their bids, the Owner, at his discretion, may extend the deadline for the submission of bids. Such extensions shall be uploaded on the e-Procurement website "<http://tsecl.in>."

1.7 Taxes and Duties

1.7.1 All applicable taxes, transportation, freights & insurance and other levies shall be paid by the bidder(s) in respect of the procurements of tendered items between the bidder(s) and their vendor(s)/sub-supplier(s) while procuring any components, sub-assemblies, raw materials and equipment which shall be included in the bid prices and no separate claim(s) on this behalf shall be entertained by TSECL.

1.7.2 Bidder shall indicate Bid prices in Indian Rupees only. Any statutory increase in GST, beyond the prevailing rates at the time of opening of tenders shall be paid on production of documentary evidence(s) during the contractual delivery period. Benefit of statutory decrease in the rates of GST below the prevailing rates at the time of opening of tenders shall be passed on to TSECL.

1.8 Preparation of bid

1.8.1 Language of bid

The bid prepared by the bidder, as well as all correspondence and documents relating to the bid exchanged by the bidder and the Owner shall be written in English language.

Only English numerals shall be used in the bid.

1.8.2 bid Prices:

Unless otherwise specified in the Technical Specifications, bidders shall quote for the entire facilities on a "single responsibility" basis such that the total bid price covers all the Contractor's obligations mentioned in or to be reasonably inferred from the Bidding Documents in respect of the Survey, Design, manufacture, including procurement, delivery, construction, installation and completion of the facilities including supply of mandatory spares (if any). **Surplus materials shall be return to the Owner before final measurement.** This includes all requirements under the Contractor's responsibilities for



testing, pre commissioning and commissioning of the facilities and, where so required by the Bidding Documents, the acquisition of all permits, approvals and licenses, etc.; the operation, maintenance and training services and such other items and services as may be specified in the Bidding Documents, all in accordance with the requirements of the General Conditions of Contract. Items against which no price is entered by the Bidder will not be paid for by the Owner when executed and shall be deemed to be covered by the prices for other items.

Bidders are required to quote the price for the commercial, contractual and technical obligations outlined in the Bidding Documents. If a Bidder wishes to make a deviation, such deviation shall be listed in the prescribed format in section – 5 of the bid. The Bidder is required to provide the cost of withdrawal for such deviations.

Bidders shall quote the offer for complete job of Route survey, Designing, supply, erection, testing, commissioning including all the allied civil works required including applicable taxes at Tripura, Local transportation, insurance and other Services incidental to delivery of the Plant and Equipment including mandatory spares to be supplied (if any), plant and equipment required for loading- unloading of equipment, etc. The bidder shall submit an **Indemnity bond** to keep Owner harmless from any liability, before release of material to the bidder by Owner.

1.8.3 bid Currencies:

The rate price must be quoted in Indian currency alone and any mistakes in converting foreign exchange component into Indian currency will not justify the claim whatsoever of Contractor for increase in prices. Foreign exchange component if any shall have to be arranged by the bidder.

1.8.4 bid Security / Earnest Money Deposit (EMD):

- i)** The Bidder shall furnish, as part of its bid, a bid security in the amount and currency as stipulated in the Bid Documents through electronically using the Online Payment Facility provided in the Portal.
- ii)** Bids which are not deposited with required amount of earnest money will be rejected and declared as **INFORMAL**. The bid security of a joint venture must be in the name of all the partners in the joint venture submitting the bid.
- iii)** Bid security (EMD) shall remain valid for a period of thirty (30) days beyond the original bid validity period, and beyond with subsequent extension of the same.



- iv) The bid securities (EMD) of unsuccessful bidders will be returned as promptly as possible, but not later than thirty (30) days after the expiration of the bid validity period.
- v) The successful Bidder shall be required to keep its bid security valid for a sufficient period till the Bidder has signed the Contract Agreement and submit the performance security (ies) to the entire satisfaction of the Owner.
- vi) No claim shall be laid against the Owner either in respect of interest or depreciation in value for the amount of earnest money.
- vii) The earnest money of the bidder(s) shall be forfeited;

If the bidder withdraws / modifies its bid during the period of bid validity specified by the bidder in the tender; or If the bidder does not accept the corrections to arithmetical errors identified during preliminary evaluation of his bid; or in case of a successful bidder, if the Bidder fails to sign the contract; or if the Bidder fails to furnish the performance guarantee.

1.8.5 Period of Validity of Bid:

Bids shall remain valid for the period of 180days after the scheduled date of opening of Techno -Commercial Part. A bid valid for a shorter period shall be rejected by the Owner as being non-responsive.

In exceptional circumstance, the Owner may solicit the Bidder's consent to an extension of the bid validity period. The request and responses thereto shall be made in writing or by e-mail. If a Bidder accepts to prolong the period of validity, the bid security shall also be suitably extended. A Bidder may refuse the request without forfeiting its bid security. A Bidder granting the request will not be required or permitted to modify its bid.

1.8.6 Format and Signing of bid:

- i) The bidder shall prepare one electronic copy each of the Commercial bid & Technical bid and Financial bid separately.
- ii) The bid document shall be digitally signed, at the time of uploading, by the bidder or a person or persons duly authorized to bind the bidder to the Contract. The authorization shall be indicated by a scanned copy of written power-of- attorney accompanying the bid. All the pages/ documents of the bid that are to be uploaded shall be digitally signed by the person authorized to sign the bid.



1.8.7 Submission of bid:

The bid Submission module of website <http://tsecl.in> enables the bidders to submit the bid online in response to this e-tender published by the Owner. Bid Submission can be done only from the Bid Submission start date and time till the Bid Submission end date and time given in the e-tender. Bidders should start the Bid Submission process well in advance so that they can submit their bid in time. The bidders should submit their bid considering the server time displayed in the website. This server time is the time by which the bid submission activity will be allowed till the permissible time on the last/end date of submission indicated in the e-tender schedule. Once the bid submission date and time is over, the bidders cannot submit their bid. For delay in submission of bid due to any reasons, the bidders shall only be held responsible. The bidders have to follow the following instructions for submission of their bid:

- a) To participate in bidding process, bidders have to get 'Digital Signature Certificate (DSC)' Class 2 / Class 3 as per Information Technology Act-2000.
- b) After login to their account, the bidder has to fill up the bid document fee detail and the EMD details. Next the bidder should upload the documents as prescribed in Clause 1.6. The components of e-tender fee and EMD should be same as filled by the bidder previously and any deviation from those result in right rejection of the tender. During the above process, the bid documents are digitally signed using the DSC of the bidder.
- c) Owner reserves the right to cancel any or all bids without assigning any reason.
- d) The SBD (Standard Bidding document) must be complete in all respects. All the terms and conditions of SBD including technical specifications should be carefully studied for the sake of submitting complete and comprehensive SBD. Failure to comply with any of the SBD conditions may lead to rejection even if otherwise it is competitive offer.

Bidders shall specially take note of all the addendum/corrigendum related to the tender and upload the latest documents as part of the tender.

The Bid should contain scanned copies and/or declarations in the following standardized formats.

A. My Document (Non-Statutory):

All the below-mentioned documents/certificates are to be uploaded with digital signature in the 'My Document' folder option available after login in the e-procurement portal <http://tsecl.in>.



Tripura State Electricity Corporation Limited
(A Govt. of Tripura Enterprise)

Bidders are requested to scan the necessary documents in **100 dpi** resolution into PDF. 'My Document' shall be populated prior to real time bidding and during real time bidding, uploaded documents/certificates in the 'My Document' are to be appropriately included (Checked) for incorporation in the Bid.

An indicative organization of 'My Document' folder and the related documents are indicated here under.

Sl. No.	Folder Name	Documents to be uploaded
1	Electrical Contractor License	Copy of Electrical Contractor License and supervisory certificate of competency for require parts
2	Enlistment	Copy of Electrical Enlistment
3	Labour License	Copy of EPF registration certificate & Labour License to be submitted with latest challan copy
4	Experience / Completion Certificate	LOA issuing authority / Agreement signing authority
5	NIT Documents	All forms / Corrigendum, / Amendments / Formats with supporting documents / certificates if published.
6	Tax related Document & Others	i) IT clearance certificate from issuing authority. ii) Copies of PAN and GSTIN Registration Certificates and Clearance certificate of GST for last Quarter by self-attested.
7	Financial details	i. Copy of balance sheet (Audited by Chartered Account) with Auditor Certificate in support of Annual Turnover i/c IT Return Certificate for the last 3(three) years of session 2020-21,2021-22 and 2022-23 as per 2.3 of section-2)
8	Misc. document	Any other documents found necessary.



9	Blacklisted or Debarred	Any bidder who has been debarred / Black listed by any Central (GOI)/ State Govt. owned Power Utility for works of similar type during 3 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 enclosed a declaration to this effect with due certification by "NOTARY" depicting full name & designation (As per Format annexed in Bid Document).
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NB: All forms/Amendments/Formats with supporting documents/certificates other than mentioned in My Document in single PDF.

B. Statutory Documents:

After uploading the above mentioned non-statutory documents/certificates, Bidders shall submit the following, during real time bidding

1. NIT

2. Bid Document

3. Technical Data Sheet/GTPs and drawings for major items specified in the Bid Document in PDF.

Note-1: Failure of submission of any one of the above-mentioned documents will render the tender for rejection.

Note-2: If the company was set up less than five years ago, audited balance sheet for the no of years since inception is to be submitted.

Note-3: Bidders are requested to scan the necessary documents/certificates in **100 dpi** resolution into PDF.

Bid Envelop-II (Financial Bid):

Documents to be submitted in the Financial Bid are:

BOQ (Priced Bill of quantity/Price schedule).

Note:

1. Bill of Quantity (BOQ) i.e. Price schedule, which is the Rate quoting sheet in MS-Excel shall be downloaded, filled up properly and uploaded in the financial bid after digital



signing. The Bidder shall always open the BOQ sheet with Macros Enabled. The Bidder shall quote rates in figures only, for all items in the Bill of Quantity (BOQ).

2. **Bidders are requested to quote rates all of item and GST % in BOQ. No item rate and columns shall leave blank or 0 (Zero) quote, otherwise the BOQ will be declared as nonresponsive and summarily rejected.**

1.8.8 Deadline for Submission of bid:

- a) bid (Commercial, Technical and Financial) must be submitted by the bidders at website <http://tsecl.in> not later than the time as prescribed in the table above (as per the server time displayed on the website).
- b) The Owner may, at its discretion, extend this deadline for submission of bid by amending the bid document, in which case all rights and obligations of the Owner and bidders previously subject to the deadline will thereafter be subject to the deadline as extended.

1.8.9 Late bid:

The server time indicated in the window on the website <http://tsecl.in> will be the time by which the bid submission activity will be allowed till the permissible date and time scheduled in the e-tender. Once the bid submission date and time is over, the bidder cannot submit his / her bid. Bidder has to start the Bid Submission well in advance so that the submission process passes off smoothly. The bidder will only be held responsible if his/her bid is not submitted in time due to any of his/her problems/faults, for whatsoever reason, during bid submission process.

1.9 OPENING AND EVALUATION OF bid:

1.9.1 Opening of Commercial & Technical bid by the Owner

1.9.1.1 The Owner will open all commercial & technical bids, in the presence of bidders who choose to attend at time specified in the table above at The Office of **Dy. General Manager, Capital Complex Electrical Division, 79 Tilla, Agartala, West Tripura**. In the event of the specified date of bid opening being declared a holiday for the Owner, the bids shall be opened at the appointed time and place on the next working day.

1.9.1.2 The bidder's names and the presence or absence of requisite bid. EMD and such other details as the Owner at its discretion may consider appropriate, will be announced at the opening. The name of such bidders not meeting the Commercial, Technical qualification requirement shall be notified subsequently.



1.9.2 Opening of Financial bid:

After evaluation of Technical bid, the Owner shall notify those bidders whose Commercial & Technical bids were considered non-responsive to the Conditions of the Contract and not meeting the technical and commercial Qualification Requirements indicating that their financial bids will not be opened. The Owner will simultaneously notify the bidders, whose technical bids were considered qualified with reference to fulfilling the pre-qualification criteria of section 4 by the bidder.

The financial bids of technically & commercially qualified bidders shall be opened in the presence of bidders who choose to attend, and date for opening of financial bids will be communicated to the Commercially & Technically Qualified Bidders subsequently after completion of technical bids evaluation. The name of bidders, Price quoted will be announced at the meeting.

The bidders shall quote their prices / rates in the same BOQ as uploaded on the website otherwise **the SBD is liable to be rejected.**

1.9.3 Clarification of bid:

During evaluation of bid, the Owner may, at its discretion, ask the bidder for a clarification of his/her bid. The request for clarification and the response shall be in writing.

1.9.4 Evaluation of Commercial & Technical bid:

The Owner will examine the bid to determine whether they are complete, whether they meet all the conditions of the Contract, whether required e-tender fee, bid EMD and other required documents have been furnished, whether the documents have been properly digitally signed, and whether the bids are generally in order. Any bid or bids not fulfilling these requirements shall be rejected.

The bidders shall submit the scanned copies as prescribed in Section -2 of commercial and technical details as documentary proof for evaluation of their commercial and technical bids.

It shall be the discretion of the Owner to decide as to whether an bid fulfils the evaluation criterion mentioned in this e-tender or not.

The bidders are advised not to mix financial bid documents with the PDF documents submitted for commercial and technical bid. The bids of the bidders having financial bid document in the technical bid will out rightly are rejected.

The technical eligibility will be decided upon evaluation of following documents:



- (i) The Firm's past experience as Turn Key contractual agency for development of infrastructure of power Distribution and Sub Transmission network.
- (ii) The Firm's past experience relevant to the Underground power distribution assignment supported by the **copy of Agreement/LOA and completion certificate** from the Owner in support of successful completion of the same.
- (iii) Qualification and Experience of key personnel.
- (iv) Overall Company profile, execution of works with Power Discoms /PSUs/CPSUs and reputed developers (excluding Real estate developers) and completion certificate of the same.

1.9.5 Financial Evaluation and Comparison of bid:

The Owner will evaluate and compare the financial rates quoted in the price schedule/BOQ of bids of those bidders whose commercial and technical e- Bids are found responsive as per the conditions of the e-tender.

No additional payments shall be made for completion of any contractual obligation beyond the quoted prices. If the Bidder does not accept the correction of errors if any, its bid shall be rejected and its bid security may be forfeited.

1.9.6 Arithmetical errors will be rectified on the following basis:

If there is a discrepancy between the unit price and the total price, which is obtained by multiplying the unit price and quantity specified by the Owner, or between subtotals and the total price, the unit or subtotal price shall prevail, and the quantity and the total price shall be corrected. However, in case of items quoted without indicating any quantity or the items for which the quantities are to be estimated by the Bidder, the total price quoted against such items shall prevail. **If there is a discrepancy between words and figures, the amount in words will prevail.**

The prices of all such item(s) against which the Bidder has not quoted rates/amount (viz., items left blank or against which is indicated) in the Price Schedules will be deemed to have been included in other item(s).

The subtotal, total price or the total bid price to be identified in Bid Form for this purpose, irrespective of the discrepancy between the amounts for the same indicated in words or figures shall be rectified in line with the procedure explained above.

If the Bidder does not accept the correction of errors as per this clause, its bid will be rejected and the amount of Bid Security forfeited.



The Bidder should ensure that the prices furnished in various price schedules are consistent with each other. In case of any inconsistency in the prices furnished in the specified price schedules to be identified in Bid Form for this purpose, the Owner shall be entitled to consider the highest price for the purpose of evaluation and for the purpose of award of the Contract use the lowest of the prices in these schedules.

1.9.7 Contacting the Owner:

No bidder shall contact the Owner on any matter relating to his / her bid, from the time of the bid opening to the time the Contract is awarded. If the bidder wishes to bring additional information to the notice of the Owner, he / she can do so in writing.

Any effort by a bidder to influence the Owner in its decisions on bid evaluation, bid comparison or contract award may result in rejection of the bidder's bid.

1.10 Award of Contract:

Subject to selection criteria in Clause 1.3, the Owner will award the contract to the successful Bidder (also referred to as the L1 Bidder) whose bid is evaluated as the best bid to perform the work with standard engineering practices and to be the lowest evaluated bid to perform the contract satisfactorily.

The Owner shall not be bound to accept the lowest or any tender and reserves to itself the right of accepting the whole or a portion of any of the tender as it may deem fit, without assigning any reason thereof. The Owner 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 the Owner's action.

Any approach / canvassing etc. official or otherwise by the bidder or his / their representative / agent to influence the consideration of their tender shall render the tender liable to summary rejection.

In the case of there being a number of bidders quoting same rates thereby forming a cartel to jack up the prices, the SBD's of such bidders shall be summarily rejected.

In order to avoid delay caused by postal correspondence after submission of SBD and to expedite the process of technical/commercial clarifications the Owner may require the successful bidder to depute his/their authorized representative along with necessary documents to the **Dy. General Manager, Capital Complex Electrical Division, 79 Tilla, Agartala, West Tripura** for sorting out the connected matters thus enabling speedy issue of formal award of contract. The representative thus deputed shall have to be competent



enough to hold technical and commercial negotiations and convey the decision / acceptance on behalf of the bidder.

The Owner reserves the right to vary the quantity of any of the spares and/or delete any items of spares altogether at the time of Award of Contract.

1.11 Notification of Award

Prior to the expiration of the period of bid validity, the Owner will notify the successful Bidder in writing, that its bid has been accepted. The notification of award will constitute the formation of the contract.

The Owner shall promptly respond in writing to any unsuccessful Bidder who, after notification of award in accordance with above, requests in writing the grounds on which its bid was not selected.

1.12 Signing the Contract Agreement

At the same time as the Owner notifies the successful Bidder that its bid has been accepted, the Bidder will prepare the Contract Agreement provided in the Bidding Documents, incorporating all agreements between the parties.

The Contract Agreement shall be prepared within Fifteen (15) days of the Notification of Award and submission of performance Bank Guarantee, the successful Bidder and the Owner shall sign and date the Contract Agreement immediately thereafter.

1.13 Performance Guarantee.

Within 15 days of receipt of Letter of Award (LOA) from the Owner, the successful Bidder shall furnish to the Owner a Performance Guarantee in the form stipulated in the Standard Bidding Format. Performance Guarantee shall be deposited in the form of Bank Guarantee.

A) Within 15 days of receipt of Letter of Award (LOA) from the Owner, the successful bidder shall furnish to the Owner a Performance Guarantee in the form of Bank Guarantee from any Nationalized Bank of an amount equal to **@10%** of Contract value as indicated in the Letter of Award. The performance guarantee shall be applicable for entire project duration including the additional **180 days from the date of commissioning entire project.**

B) Additional Contract Performance Guarantee:

For bids up to 15% less than the estimated value of work, no additional security deposit is required. But for bids less than 15% of the estimated value of work, the difference between the bided amount and 85% of the estimated value of work, shall be paid by the successful bidder at the time of concluding agreement as an



additional security to fulfil the contract through a Bank Guarantee or Demand Draft on a Nationalized Bank / Scheduled Bank in the prescribe Format valid till the completion of the work in all respects.

C) Failure of the successful Bidder to comply with the requirements of Clause 1.11 and Clause 1.12 shall constitute sufficient grounds for the annulment of the award and forfeiture of the bid security (EMD), in which event the Owner may make the award to the next lowest evaluated Bidder or call for new bids.

•The Contract Performance Guarantee shall be forfeited: -

- i) If the contractor fails to start the work as per approved BAR CHART for reasons solely rest on him.**
- ii) 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.**
- iii) If the contractor left / suspends the work for reasons which are not acceptable to TSECL.**

1.14 Fraud and Corruption

It is the Owner's policy that requires the Bidders, suppliers and contractors and their sub-contractors under the contracts to observe the highest standard of ethics during the procurement and execution of such contracts. In pursuance of this policy, the Owner:

- a) Defines, for the purpose of this provision, the terms set forth below as follows: (i) "corrupt practice" is the offering, giving, receiving or soliciting, directly or indirectly, of anything of value to influence improperly the actions of another party;
- b) "fraudulent practice" is any act or omission, including a misrepresentation, that knowingly or recklessly misleads or attempts to mislead, a party to obtain a financial or other benefit or to avoid an obligation;
- c) "collusive practice" is an arrangement between two or more parties designed to achieve an improper purpose, including to influence improperly the actions of another party;
- d) "Coercive practice" is impairing or harming, or threatening to impair or harm, directly or indirectly, any party or the property of the party to influence improperly the actions of a party;
- e) "Obstructive practice" is
 - (aa) deliberately destroying, falsifying, altering or concealing of evidence material to the investigation or making false statements to investigators in order to materially impede an



- Owner's investigation into allegations of a corrupt, fraudulent, coercive or collusive practice; and / or threatening, harassing or
Intimidating any party to prevent it from disclosing its knowledge of matters relevant to the investigation or from pursuing the investigation; or
- (bb) Acts intended to materially impede the exercise of the Owner's inspection and audit rights.
- f) Will reject a proposal for award if it determines that the bidder recommended for award has, directly or through an agent, engaged in corrupt, fraudulent, collusive, coercive or obstructive practices in competing for the contract in question;
- g) Will sanction a firm or individual, including declaring ineligible, either indefinitely or for a stated period of time, to be awarded a contract if it at any time determines that the firm has, directly or through an agent, engaged in corrupt, fraudulent, collusive, coercive or obstructive practices in competing for, or in executing, a contract; and
- h) Will have the right to require that the provision be included in Bidding Documents and in contracts, requiring Bidders, suppliers, and contractors and their sub-contractors to permit the Owner to inspect their accounts and records and other documents relating to bid submission and contract performance and to have them audited by auditors appointed by the Owner.

SECTION 2: PRE-QUALIFICATION CRITERIA

1 PRE-QUALIFYING CRITERIA

Qualification of bidder will be based on meeting the criteria as specified in Pre-qualifying criteria as demonstrated by the Bidder's responses in the corresponding Bid Schedules. No Subcontract is to be entertained all activities shall be carried out by the Main Contractor. Subcontractors' technical experience and financial resources shall not be taken into account in determining the Bidder's compliance with the qualifying criteria. The bid can be submitted by an Indian individual firm only or by Joint Venture firm having Indian partner firms only. Notwithstanding anything stated herein above, TSECL reserves the right to assess the



capacity and capability of the bidder, should the circumstances warrant such assessment in an overall interest of the TSECL. TSECL reserves the right to waive minor deviations if they do not materially affect the capability of the Bidder to perform the contract.

Technical bid shall contain the following documents digital signature by the bidder in the scanned form and pdf format only:

- a. Covering Letter.
- b. Signed Copy of Bid Documents.
- c. Power of Attorney / Board Resolution in favour of signatory of the bid.
- d. Copies of original documents defining the constitution or legal status, place of registration and principal place of business
- e. Qualification details as stipulated in the bid document.
- f. Details of Past experience as mentioned in qualification criteria.
- g. Annual Turnover of the bidder for the last three years must be submitted in the shape of audited balanced sheet by CA.
- h. Certificate of incorporation in case of company along with copies of Articles of Association (AOA) and Memorandum of Association (MOA).
- i. Filled Forms as given in Section 5 – Standard Bidding Format, as applicable.
- j. Other details as called for in the bid documents or which the bidder may like to highlight. The bids of the bidders not submitting certified copies of documents in scanned form mentioned above from (a) to (j) shall liable to be rejected.

Pre-qualification criteria

1.1 Part-A: Technical:

- a) The bidder must done construction and commissioning work of UG Cable line of minimum **30% quantities mentioned in the tender** in a single award on turnkey/partial turkey basis during last 7(Seven) years which must be in satisfactory operation for at least 1(One) years from last days of submission of present bid as per NIT. Performance certificate from reputed Indian Power Utility not below the rank of Executive Engineer/ Deputy General Manager /Divisional Engineer of equivalent to be submitted along with technical bid. Experience as sub-contractor will not be considered in this case.



- b) The minimum average annual turnover of the bidder for the last three years shall be not less than 30% of the estimated cost put to the tender.
 - c) Bids may be submitted by an individual firm (proprietorship entry) with relevant experience.
 - d) (i) All Joint Venture Partner (JV) combined must meet the requirement mentioned in para a & b.
(ii) Each Partner must meet minimum 1(one) contract of similar nature and participation in relevant contract shall meet or exceed 25% of the respective requirement mentioned in clause a above and vis-à-vis.
(iii) The figures of average annual turnovers for each registered firm/Company/ proprietorship entity shall be added together to determine the bidder's compliance with the minimum average annual turnover requirement for the package as given at para b above
- 1.2 The bidder should possess **Electrical Contractor License and supervisory certificate of competency for require parts** issued by the Appropriate Authority.
- 1.3 Work experiences of the bidder as per above shall be considered only if the works have been executed under Govt. power distribution company / state electricity board in India.

1.2 Part-B: COMMERCIAL:

For the purpose of this particular bid, bidder shall meet the following minimum commercial criteria prior to bid submission:

~~i) Experience in one or more up to 3 (three) completed works of 33 KV or above voltage under grounding cabling including 33 KV or above voltage packaged sub stations in electrical transmission or sub transmission & distribution sector executed under Govt power distribution company / state electricity board in India costing not less than the amount equal to 50% of the estimated amount of the project individually,~~

OR

ii) Experience in 1(one) or more up to 3(three) completed works of 11 KV or above voltage under Grounding cabling in electrical transmission or Sub transmission & distribution sector executed company / state electricity board in India costing not less than the amount equal to 50% of the estimated amount of the project individually.,

OR

iii) Experience in 1(one) or more up to 3 (three) completed work of 11 KV or above voltage Overhead line including distribution sub-Station in electrical Transmission or Sub-Station & distribution sector executed under Govt. power distribution company/ state electricity board in



India costing not less than the amount equal of 50% of the estimated amount of the project individually.

1.3 Net Worth for the each of the last Three Financial Years should be positive. Net worth means the sum total of the paid up capital and free reserves (excluding reserves created out of revaluation) reduced by aggregate value of accumulated loses (including debit balance in profit and loss account for current year) and intangible assets.

2.3 Minimum Average Annual Turnover (MAAT) for three years financial years of the bidder should not be less than **30% of the project cost.**

1.4 Litigation History:

The bidder should provide detailed information on any litigation or arbitration arising out of contracts completed or under execution by it over the last five years. A consistent history of awards involving litigation against the Bidder may result in rejection of Bid.

1.5 Assessment of capability:

Notwithstanding anything stated above the Owner reserves the right to assess capability and capacity of the bidder to successfully execute the work covered within stipulated completion period. This assessment shall inter-alia include (i) document verification; (ii) details of works executed, works in hand, anticipated in future in addition to the works involved in present bid, (iii) details of manpower and financial resources; (iv) Manpower Details for the project (v) past experience and performance; (vi) customer feedback; (vii) banker's feedback etc. The bidder shall also furnish pre-qualifying information along with documentary evidence in support of the qualifying requirements stipulated as above. Bid of those bidders who do not submit the pre-qualifying information shall not be entertained and shall be rejected.

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SECTION 3: GENERAL CONDITIOS OF CONTRACT:

This part, The Section-3 of the Bidding Documents is named as General Conditions of Contract (GCC) and provides all the rights and obligations of the parties under the Contract. This Section contains provisions which are to be used unchanged unless Section -4 named as Special Conditions of Contract (SCC) states otherwise as any changes in GCC or any complementary information that may be needed has been shown in SCC. If there is a conflict between the provisions of Section -3 & Section -4, the provisions of Section -4 shall prevail.



3.1 DEFINITIONS AND INTERPRETATIONS:

3.1.1 Definitions:

In the contract (as hereinafter defined) the following words and expressions shall, have the meanings hereby assigned to them except where the contract otherwise requires

- a) "Owner" shall mean shall mean **TRIPURA STATE ELECTRICITY CORPORATION LIMITED** (TSECL) and shall include their legal representatives, successors and assigns
- b) "Engineer-in-Charge / Engineer" shall mean Deputy General Manager (Technical) / or any authorized persons by Owner.
- c) "Project Management Consultancy/ PMC Team" means the person(s) or firm(s) engaged by the Owner and notified as such to the Contractors who will be authorized to monitor project supervision and conduct independent inspections on the Plant/Equipment to be supplied by the Contractor for incorporation into the Works, either at the place of manufacture or fabrication or at the Site, as applicable.
- d) '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.
- e) '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 the conditions, the specifications, the drawings, the bill of quantities, the bid, the letter of award/ acceptance, the contract agreement and such further documents as may be expressly incorporated in the letter of acceptance or contract agreement and appendices thereto and all documents incorporated by reference therein.
- f) "Date of Commencement" is the date when LOA placed by the Owner.
- g) '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 and thereof which may be allocated or used by TSECL or Contractor in the performance of the Contract
- h) 'Specification' shall mean collectively all the terms and stipulations Contained in those portions of the 'Contract' known as General Conditions of Contract, the Specifications and such Amendments, Revisions, Deletions or Additions, as may be made in the Agreement and all written Agreements made or to be made pertaining to the method and manner of



performing the 'Work' or to the quantities and qualities of the materials to be furnished under this 'Contract'

- i) "Drawings" means all drawings, calculations and technical information provided by the Engineer-In-Charge to the contractor under the contract and all drawings, calculations, samples, patterns, models, operations and maintenance manuals and other technical information of a like nature submitted by the contractor- and approved by the Owners/Engineer-In-Charge.
- j) "Tender/Bid" means the contractor's offer to the Owner for the execution and completion of the works and remedying of any defects therein, in accordance with the provisions of the contract, as accepted by the letter of acceptance. The word tender is synonymous with 'Bid' and the words "tender documents" with "Bidding Documents".
- h) 'MANUFACTURER' refers to a person or firm who is the producer and furnisher of material or designer and fabricator of equipment to either the OWNER/ PURCHASER or the VENDOR/CONTRACTOR or both under the 'Contract'.
- i) 'SUB-VENDOR/SUB-CONTRACTOR/SUB-FABRICATOR' shall mean the person named in the 'Contract' undertaking a part of the work or any person to whom a part of the 'Contract' has been sublet with the consent in writing of the principal OWNER/ PURCHASER and shall include his heirs, legal representatives, successors and permitted assigns.
- j) 'Plant' or 'Equipment' and 'Work' or 'Works' shall mean respectively the goods to be supplied and/or services to be provided including those for electrical works by the VENDOR/CONTRACTOR/FABRICATOR under the 'Purchase Order' or 'Contract'.
- k) 'Commissioning' shall mean integrated activity covered under 'Pre-commissioning Operation', 'Initial Operation', 'Trial. Operation' and carrying out 'Performance Tests'.
- l) 'Trial Operation' shall mean the integrated operation of the plant/system/ equipment covered under the 'Contract' for a specified period at specified Load for providing trouble-free operation of the plant/system/equipment covered under the 'Contract'.
- m) 'Performance Tests' shall mean such tests as are prescribed in the 'Specification', to be done by the CONTRACTOR before the plant is taken over under guarantee by the Owner to the satisfaction of the ENGINEER.
- p) 'Commercial Use' shall mean that use of the equipment or work, which the 'Contract' contemplates or that for which equipment or work is commercially capable.
- q) 'Codes and Standards' shall mean all the applicable codes and standards as Indicated In the 'Specification' and shall include, but not limited to, the following:



- (a) Various Regulations of Tripura Electricity Regulatory Commission.
- (b) Relevant publications of Bureau of Indian Standards and MORT&H.
- (c) Any other internationally approved standard and/or Rules and regulations relevant to the subject matter of the Contract.
- r) "Works" means the permanent works and the temporary works or either of them as appropriate.
- s) "Letter of acceptance" shall mean intimation by a letter/fax of intent that the tender has been accepted in accordance with the provisions contained in the said letter/fax.
- t) "Letter to proceed with work" means the formal acceptance by the Owner.
- u) "Contract Price" means the sum stated in the Letter of acceptance as payable to the contractor for execution and completion of the works and remedying of any defects therein in accordance with the provision of the contract.
- v) "Cost" means all expenditure properly incurred or to be incurred, whether on or off the site including overhead and other charges properly allowable thereon but does not include any allowance for profit.
- w) "Day" means a day of 24 hrs. from midnight to midnight irrespective of the number of hours worked in that day.
- x) "Working day" means any day, which is not declared to be holiday or rest day by the Owner.
- y) "Week" means a period of any consecutive seven days.
- aa) "Writing" means any hand written or printed/typed communication, including fax.
- ab) "Corrupt practice" means the offering, giving, receiving or soliciting of anything of value to influence the action of a public official in the procurement process or in contract execution.
- ac) "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 price at artificial non-competitive levels and to deprive the Owner of the benefits of free and open completions.
- ad) Terms and expressions not herein defined shall have the same meaning as are assigned to them in the Indian Sale of Goods Act (1930), Indian Contract Act (1972) and General Clauses Act (1987).



- ae) '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.
- af) "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.
- ag) '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.
- ah) "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.
- ai) '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.
- aj) '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.
- ak) 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.

3.1.2 Heading and Marginal Notes:

The headings and marginal notes in these conditions are indicative only and shall not be deemed part thereof or be taken into consideration in the interpretation or construction of the contract.

3.1.3 Interpretation:

Words importing persons or parties shall include firms and corporations and any organization having legal capacity.



3.1.4 Singular and Plural:

Words importing the singular only also include the plural and vice versa where the context so require.

3.1.5 Notice, consents, approvals, certificates and determinations:

Wherever in the contract provision is made for giving or issue of any notice consent, certificate or determination by any persons, unless otherwise specified such notice, consent, approval, certificate or determination shall be in writing and the words 'notify' certify or determine shall be constructed accordingly.

3.1.6 Vendor/Contractor to Inform Himself Fully:

The VENDOR / CONTRACTOR shall be deemed to have carefully examined all Contract Documents to his entire satisfaction. If he shall have any doubt as to the meaning of any portion of the Contract/bid Documents, he shall, before accepting / signing the 'Contract' set forth the particulars thereof, and submit them to the Owner in writing, in order that such doubt may be removed. The Owner will provide such clarifications as may be necessary in writing to the CONTRACTOR. Any information otherwise obtained from the Owner or the ENGINEER shall not in any way relieve the VENDOR/ CONTRACTOR of his responsibility to fulfil his obligations under the 'Contract'.

3.2 ENGINEER-IN-CHARGE'S REPRESENTATIVE:

3.2.1 Engineer-in-charge's duties and authority:

- i) The Owner will appoint any of his officers or any agency as the case may be as engineer-in-charge to deal with all the matters related to the execution and operation of contract.
- ii) However, the Owner/Owner's representatives reserve the right in checking/tests checking of the operation of the contract in respect of quality, testing, and measurement of works either directly or through a separate agency or both.

3.2.2 Engineer-in-charge's representative:

The engineer-in-charge's representative shall be appointed by and be responsible to the Engineer-in-Charge and shall carry out such duties and exercise such authority as may be delegated to him by the engineer-in-charge under sub clause 3.2.3.

3.2.3 Engineer-in-charge's authority to delegate:

The engineer-in-charge may from time to time delegate to his representative any of the duties and authorities vested in the Engineer-in-charge and he may at any time revoke such



delegation. Any such delegation or revocation shall be in writing and shall not take effect until a copy thereof has been delivered to the contractor.

Any communication given by the Engineer-in-charges representative to the contractor in accordance with such delegation shall have the same effect as if, it had been given by the Engineer-in-charge, provided that

(a) Any failure of the Engineer-in-charge's representatives to disapprove any work, materials or plant shall not prejudice the authority of the Engineer-in-charge to disapprove such work, materials or plant and to give instructions for the rectification thereof, and

(b) If the contractor questions any communication of the Engineer-in-charge's representative, he may refer the matter to the Engineer-in-charge who shall confirm, reverse or vary the contents of such communication.

3.2.4 Appointment of Assistant:

The Engineer-in-charges representative may appoint any number of persons to assist the Engineer-in-Charges Representative in carrying out of his duties. He shall notify to the contractor the names, duties and the scope of authority of such persons. Such assistants shall have no authority to issue any instructions to the contractor save in so far as such instructions may be necessary to enable them to carry out their duties and to secure their acceptance of materials plants or workmanship as being in accordance with the contractor, and any instructions given by any of them for those purpose shall be deemed to have been given by the Engineer-in-charge's Representative.

3.2.5 Instructions in Writing:

Instructions given by the Engineer-in-charge shall be in writing, provided that if for any reason the Engineer-in-charge considers it necessary to give any such instructions orally, the contractor shall comply with such instructions. Confirmation in writing of such oral instructions given by the Engineer-in-charge, whether before or after carrying out of the instructions, shall deemed to be an instruction within the meaning of this sub clause. Provided further that if the contractor, within 7 days, confirms in writing to the Engineer-in-charge any oral instruction of the Engineer-incharge and such confirmation is not contradicted in writing within 7 days by the Engineer-in-charge, it shall be deemed to be an instruction of the Engineer-in-charge.

The provisions of this sub clause shall equally apply to instructions given by the Engineer-in-charge's Representative and any assistant of the Engineer-in-Charge or the Engineer-in-charge's Representative appointed pursuant to sub clause 3.2.4.



3.3 CONTRACT DOCUMENTS

3.3.1 Language and Law

- (a) The language in which the contract documents shall be drawn up is English.
- (b) As this contract has been constructed in India, so Indian laws in addition to Laws in force in Tripura shall apply to this contract.

3.3.2 Priority of Contract Documents

The several documents forming the contract are to be taken as mutually explanatory of one another, but in case of ambiguities or discrepancies the same shall be explained and adjusted by the Engineer-in-charge who shall thereupon issue to the contractor instructions thereon and in such event, unless otherwise provided in the contract, the priority of the documents forming the contract shall be as follows:

- i. The contract agreement
- ii. The letter of acceptance
- iii. Letter to proceed with work
- iv. Owners requirements and technical specifications
- v. Special conditions
- vi. The tender.
- vii. Bill of Quantities
- viii. Specifications
- ix. General Conditions
- x. Drawings
- xi. Any other documents forming part of the contract/contractor's proposals if any.

3.3.3 Custody and supply of drawings and documents

The drawings shall remain in the sole custody of the Engineer-in-charge, but two copies thereof shall be provided to the contractor free of charge. The contractor shall make at his own cost any further copies required by him. Unless it is strictly necessary for the purpose of the contract, the drawings, specifications and other documents provided by the Owner or the engineer-in-charge shall not, without the consent of the engineer-in-charge, be used or communicated to a third party by the contractor. Upon issue of



Defect Liabilities Completion Certificate, the contractor shall return to the Engineer-in-Charge all drawings, specifications, and other documents provided under the contract.

One copy of the Drawings, provided to or supplied by the contractor shall be kept by the contractor on the site and the same shall at all reasonable times be available for inspection and use by the Engineer-in-Charge and any other person authorized by the Engineer-in-Charge in Writing.

3.3.4 Disruption of Progress

The contractor shall give notice to the Engineer-in-charge, whenever planning or execution of the works is likely to be delayed or disrupted unless any further drawing or instruction is issued by Engineer-in-charge within a reasonable time. The notice shall include details of the drawings or instructions required and of why and by when it is required and of any delay or disruption likely to be suffered if it is late.

If, by reason of any failure or inability of the Engineer-in-charge to issue, within a time reasonable under the circumstances any drawings or instruction for which notice has been given by the contractor in accordance with this sub clause, the contractor suffers delay, then the Engineer-in-charge shall, after due consultation with the contractor and approval of the Owner, determine any extension of time to which the contractor is entitled.

If the failure or inability of the Engineer-in-charge to issue any drawing or instructions is caused in whole or in part of the failure of the contractor to submit drawings, specifications or other documents which he is required to submit under the contract, the Engineer-in-charge shall take such failure by the contractor into account when making his determination for extension of time.

3.3.5 Supplementary Drawings and Instructions

The Engineer-in-charge shall have the authority to issue to the contractor from time to time, such supplementary drawings in the form of GFC (Good for Construction) drawings and instructions as shall be necessary for the purpose of proper and adequate execution and completion of the work and remedying of any defects therein. The contractor shall carry out and be bound by the same.

3.4 GENERAL OBLIGATIONS

3.4.1 Contractor's general responsibilities

The contractor shall with due care and diligence (to the extent provided in the contract) execute and complete the work and remedy any defects therein in accordance with the provisions of the contract. The contractor shall provide all supervisory, labour, materials,



plant, construction equipment and all other things, whether of temporary or permanent nature, required in and for such design, execution, completion and remedying of any defects, so far as the necessity for providing the same is specified in or is reasonably to be inferred from the contract. The contractor shall provide the same in specified form which is reasonably to be inferred from the contract. The contractor shall promptly notify the Owner and the Engineer-in-charge of any effort, omission, fault or any other defect in the design or specifications for the work which he discovers when reviewing the contract documents or in the process of execution of the works.

The contractor shall take the full responsibility for the adequacy, stability and safety of all site operations and methods of construction, provided that the contract shall not be responsible (except as stated hereunder or as may be otherwise agreed) for the design or specification of works, not prepared by the contractor. Whereas this contract expressly provides that all of the components of this work shall be designed by the contractor, he shall be fully responsible for all the works, notwithstanding any approval by the Engineer-in-charge.

3.4.2 Contract agreement

The contract agreement shall be prepared and completed in the form provided in section – 5 to these conditions with such modifications as may be necessary.

3.4.3 Inspection of site

The contractor shall deem to have inspected the site and examined its surroundings and collected information available in connection therewith and to have satisfied himself (so far as is practicable, having regard to considerations of cost and time, at his own responsibility and expense) before submitting his bid, as to:

- (a) The form and nature thereof, including the sub surface conditions
- (b) the hydrological and climatic conditions
- (c) the extent and nature of work, labour and materials necessary for speedy execution of the works, their availability and other related matters and remedying of any defects therein, and
- (d) The means of access to the site and accommodation he may require. And in general, shall be deemed to have obtained all necessary information as above mentioned, as to risks, contingencies and all other circumstances which may influence or affect his bid.



3.4.4 Sufficiency of tender

The contractor shall be deemed to have satisfied himself as to the correctness and sufficiency of the tender and of the rates and prices stated in the bill of quantities all of which shall except in so far as it is otherwise provided in the contract, cover all his obligations under the contract (including those in respect of the supply of good, materials, plant or services) and all matters and things necessary for the proper execution and completion of the works and remedying of any defects therein.

The rate quoted against each item or work shall be for the complete finished item of work and shall be inclusive of all taxes duties and all cost and expenses which may be required in and for execution and full protection of the work as described together with all general risks / liabilities and obligations set forth or implied in the documents on which the tender is based.

The rates quoted against each item in the schedule of quantities shall be deemed to cater for all minor constructional details which are not specifically mentioned, but are fairly and obviously intended and are essential for the full and final completion of works and the contractor is not entitled to make any extra claim on this account.

3.4.5 Work to be in accordance with contract

Unless it is legally or physically impossible, the contractor shall execute and complete the works and remedy any defects therein in strict accordance with the contract to the satisfaction of the Engineer-in-charge. The contractor shall comply with and adhere strictly to the Engineer-in-charge's instruction on any matter, whether mentioned in the contract or not, touching or concerning the work. The contractor shall take instructions only from the Engineer-in-Charge or from the Engineer-in-charges representative.

3.4.6 Program to be submitted

The contractor shall, within the time of 15 days from the date of letter of award, submit to the Engineer-in-charge for his consent, a program in such form and details as the Engineer-in-charge shall reasonably prescribe, for the execution of the works. The contractor shall whenever require by the Engineer-in-Charge, also provide in writing for his information a general description of the arrangements and methods which the contractor proposes to adopt for the execution of the works.

If at any time it should appear to the Engineer-in-charge that the actual progress of the works does not confirm to the program to which consent has been given, the contractor shall produce at the request of the Engineer-in-charge, revised program showing the modifications to such program necessary to ensure completion of the works.



3.4.7 Engineer-in-charge at Liberty to Object

The Engineer-in-charge shall be at liberty to object to and require the contractor to remove forthwith from the works any persons provided by the contractor who, in the opinion of the Owner/ Engineer-in-charge, misconducts himself or is incompetent or negligent in the proper performance of his duties, or whose presence on site is otherwise considered by the Engineer-in-charge to be undesirable, and such persons shall not be again allowed upon the works without the consent of the Engineer-in-charge. Any person so removed from the works shall be replaced as soon as possible.

3.4.8 Setting out

The contractor shall be responsible for:

- (a) The accurate setting out of the works in relation to original points, lines and levels, of reference given by the Engineer-in-charge in writing based on approved DGPS survey data.
- (b) The correctness of the position, levels, dimensions and alignments of all part of the works.
- (c) The provision of all necessary instruments, appliances and labour in connection with the forgoing responsibilities, if, at any time during the execution of the works any error appears in the position, levels, dimensions or alignment of any part of the works the contractor on being required to do so by the Engineer-in-Charge, shall at his own cost rectify such error to the satisfaction of Engineer-in-Charge, unless such error is based on incorrect data supplied in writing by the Engineer-in-Charge.
- (d) The checking of any setting -out or of any Line or level by the Engineer-in-Charge shall not in any way relieve the contractor of his responsibility for the accuracy thereof and the contractor shall carefully protect and preserve all bench marks sight -rails, pegs and other things used in setting out of the works.

3.4.9 Safety, Security and Protection of the Environment

The contractor shall throughout the execution and completion of the works and the remedying of any defects therein;

- (a) Have full regard for the safety of all persons entitled to be upon the site and keep the site (so far as the same is under his control) and the works (the same are not completed or occupied by the Owner) in an orderly state appropriate to the avoidance of danger to such persons.



- (b) Provide and maintain at his own cost all lights, guards, fencing, warning signs and watching, when and where necessary or required by the Engineer-in-Charge or by any duly constituted authority, for the protection of the works or for the safety and convenience of the public or others.
- (c) Take all reasonable steps to protect the environment on and off the site and to avoid damage or nuisance to persons or to property of the public or others resulting from pollution, noise or other causes arising as a consequence of his methods or operation.

In case of the failure on the part of the contractor on above accounts, the consequences of the same shall be borne by the contractor. Alternatively, the Engineer-in-Charge may take reasonable steps to comply with the above at the risk and cost of the contractor.

3.4.10 Care of works

The contractor shall take full responsibility for the care of the works and materials and plant for incorporation therein from the commencement date until the date of issue of the taking over certificate for the whole of the works, when the responsibility for the said care shall subject to pass to the Owner provided that;

- (a) If the Engineer-in-Charge issues a taking over certificate for any section or part of the works, the contractor shall cease to be liable for the care of that section or part from the date of issuing of the taking over certificate, when the responsibility for the care of that section shall pass to the Owner, and
- (b) The contractor shall take full responsibility for the care of any outstanding works and materials and plant for incorporation therein he undertakes to or is otherwise required to finish during the defect's liabilities period along with the defects if any until such outstanding works have been completed.

3.4.11 Responsibility to Rectify or Damage

If any loss or damage happens to the works or any part thereof, or materials or plant for incorporation therein, during the period for which the contractor is responsible for the care thereof, from any cause whatsoever, other than the risks defined in sub clause 3.4.12, the contractor shall at his own cost, rectify such loss or damage so that the works conform in every respect with the provision of the contract to the satisfaction of the Engineer-in-Charge. The contractor shall also be liable for any loss or damage to the works occasioned by him in the course of any operation carried out by him for the purpose of complying with his obligations under clause 3.3.8 and 3.3.9.



3.4.12 Owner's Risks

(a) The Owner's risks are;

- 1) War, hostilities (whether war be declared or not) invasion act of foreign enemies.
- 2) Rebellion, revolution, insurrection or military or usurped power or civil war.
- 3) Pressure waves caused by aircraft or other Aerial devices traveling at sonic or supersonic speeds.

(b) Loss or damage due to the use or occupation by the Owner of any section of part of the works except as may be provided for the contract.

(c) Any operation of the forces of nature (insofar as it occurs on the site) such as earthquakes, tornado, lightning and unprecedented floods etc. against which an experienced contractor could not reasonably have been expected to take precautions.

3.4.13 Fossils

All fossils, coins, articles of value or antiquities and structures and other remains or things of geological or archaeological interest discovered on the site of the works shall be deemed to be absolute property of the Owner and the contractor shall take reasonable precautions to prevent his workmen or any other person from removing or damaging any such article or thing and shall immediately upon discovery thereof and before removal, acquaint the Engineer-in-Charge or Engineer-in-Charge's representative of such discovery and carry out the Engineer-in-Charge instructions for dealing with the same.

3.4.14 Underground works

During excavation if existing underground network are noticed and the same is needed to be removed/ relocated, the cost of removal/ relocation shall be determined by the Engineer-in-Charge and reimbursed to the contractor after getting approval of the Owner.

Other than power utility, Engineer –in –Charge shall inform concerned stakeholders for relocating the same.

3.4.15 Taking Over

Upon successful Trial –Operation of the Facilities or any part thereof, pursuant to GCC Sub-Clause 3.4.15, the Owner shall issue to the Contractor a Taking Over Certificate as a proof of the acceptance of the Facilities or any part thereof. Such certificate shall not relieve the Contractor of any of his obligations which otherwise survive, by the terms and conditions of Contract after issue of such certificate.



If within twenty-one (21) days after receipt of the Contractor's notice, the Owner fails to issue the Taking Over Certificate or fails to inform the Contractor in writing of the justifiable reasons why the Owner has not issued the Taking Over Certificate, the Facilities or the relevant part thereof shall be deemed to have been Taken Over as at the date of the Contractor's said notice.

Upon Taking Over of the Facilities or any part thereof, the Owner shall be responsible for the care and custody of the Facilities or the relevant part thereof, together with the risk of loss or damage thereto, and shall thereafter take over the Facilities or the relevant part thereof.

Operational Acceptance

Guarantee Test

The Guarantee Test (and repeats thereof), if any specified in the SCC and/or the Technical Specification, shall be conducted by the Contractor after successful Trial – Operation of the Facilities or the relevant part thereof to ascertain whether the Facilities or the relevant part can attain the Functional Guarantees specified in the Contract Documents or if otherwise required as per the Technical Specifications. The Contractor's and Engineer in charge authorized personnel may witness the Guarantee Test. The Contractor shall promptly provide the Owner with such information as the Owner may reasonably require in relation to the conduct and results of the Guarantee Test (and any repeats thereof).

If for reasons not attributable to the Contractor, the Guarantee Test of the Facilities or the relevant part thereof cannot be successfully completed within the time stipulated in the Technical Specifications the period for completing the same shall be as agreed upon by the Owner and the Contractor.

Operational Acceptance

Operational Acceptance shall occur in respect of the Facilities or any part thereof as mentioned below:

(I) In case no Functional Guarantees are applicable, Operational Acceptance shall occur when the Facilities or part thereof have been successfully Commissioned and Trial – Operation for the specified period have been successfully completed

(II) In case Functional Guarantees are applicable, Operational Acceptance shall occur when the Functional Guarantees are met or the Contractor has paid liquidated damages specified in GCC Sub-Clause 3.7.8 hereof;



The Engineer in charge shall within twenty-one (21) days after receipt of the Contractor's notice, issue an Operational Acceptance Certificate as a proof of the final acceptance of the Plant and Equipment. Such certificate shall not relieve the Contractor of any of his obligations which otherwise survive, by the terms and conditions of Contract after issue of such certificate.

□ **Partial Acceptance**

If the Contract specifies that Commissioning shall be carried out in respect of parts of the Facilities, the provisions relating to Commissioning including the Trial – Operation and Guarantee Test shall apply to each such part of the Facilities individually, and the Operational Acceptance Certificate shall be issued accordingly for each such part of the Facilities.

3.4.16 Quantity Variation/Deviation

- I. During 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%**.
- II. The Contract price shall accordingly be adjusted based on the unit rates available in the Contract for the change in quantities as above. 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 / cannot 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 cannot 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 for 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 (**Deputy General Manager / Senior Manager**) of the **work shall be conclusive for approval of the time extension by TSECL.**

3.4.17 Functional Guarantees

The Contractor guarantees that the Facilities and all parts thereof shall attain the Functional Guarantees specified in the Technical Specifications, subject to and upon the conditions therein specified.

If, for reasons attributable to the Contractor, the minimum level of the Functional Guarantees specified in the Technical Specifications are not met either in whole or in part, the Contractor shall at its cost and expense make such changes, modifications and/or additions to the Plant or any part thereof as may be necessary to meet at least the minimum level of such Guarantees. The Contractor shall notify the Owner upon completion of the necessary changes, modifications and / or additions, and shall request the Owner to repeat the Guarantee Test until the minimum level of the Guarantees has been met. If the Contractor eventually fails to meet the minimum level of Functional Guarantees, the Owner may consider termination of the Contract and recover the payments already made to the Contractor.

3.4.18 Equipment Performance Guarantees

The Contractor guarantees that the Equipment, named in the **SCC**, shall attain the rating and performance requirements specified to the Contract Agreement, subject to and upon the conditions therein specified.



If the guarantees specified to the Contract Agreement are not established, then the Owner shall reject the equipment.

In case the Owner rejects the equipment, the Contractor shall at its cost and expense make such changes, modifications and/or additions to the equipment or any part thereof as may be necessary to meet the specified guarantees. The Contractor shall notify the Owner upon completion of the necessary changes, modifications and/or additions, and shall request the Owner to repeat the Test until the level of the specified guarantee has been met.

The guarantee period for equipment & cable shall be min. 18months from the date of delivery or 12 months from the date of erection & commissioning, whichever is later.

3.4.19 Patent Rights

The contractor shall indemnify the Owner against all claims and proceedings for or on account of infringement of any patent right, design, trademark or name or other protected right in respect of any contractor's equipment, materials or plant used for or in connection with or for incorporation in the works and from and against all damages, costs, charges and expenses whatsoever in respect or in relation thereto, except where such infringement result from the compliance with the design or specification provided by the Engineer-in-Charge.

3.4.20 Royalties

Except where otherwise stated the contractor shall pay all tonnage and other royalties, rent fees and other payments Like royalty or compensation (if any) for getting stone, sand, gravel, clay or other materials required for the works or any of them.

3.4.21 Contractor to keep site clear

During the execution of the works the contractor shall keep the site reasonably free from all unnecessary obstructions and shall dispose-off any contractor's equipment and surplus materials and clear away and remove from the site any wreckage, rubbish or temporary works no longer required.

3.4.22 Clearance of site on Completion

Before the issue of any Taking Over Certificate, the contractor shall clear away and remove from that part of the site to which such taking over certificate relates all contractor's equipment surplus material rubbish and temporary works of every kind and leave such part of the site and works clean and in workmanlike condition to the satisfaction of the Owner/ Engineer-in-Charge, provided that the contractor shall be entitled to retain on site, until the end of the defects liabilities period, such materials, contractor's equipment, and



temporary works as are required by him for the purpose of fulfilling his obligations during the defects Liabilities period.

3.4.23 Staff and Labour

(a) Minimum technical/non-technical/supervisory staff shall be posted as per details provided in pre-qualification bid documents. Same staff shall not be changed/ replaced without prior approval of the Owner. In rare emergency cases, with proper justification, replacement of staff shall be permitted by the Owner, if person of similar and equivalent qualifications and experience is proposed as replacement of originally proposed employees in S.B.D document.

(b) Labour

The contractor shall make his own arrangements for engagement of all labour local or other. The contractor shall, if required, by the Engineer-in-Charge, deliver to the Engineer-in-Charge's representative, or at his office, a return, in detail, in such form and such intervals as the engineer in charge may prescribe showing supervisory staff and the number of the several classes of labour from time to time employed by the contractor on the site and such information regarding constructional plant as the Engineer-in-Charge's representatives may require. The contractor shall file all labour returns in detail to the respective authorities/statutory bodies as prescribed under law applicable at the work site and inform the Owner/ Engineer-in-Charge with copies of such returns directly filed.

The contractor shall abide by the local laws and regulations governing Labour applicable from time to time. During continuance of the contract, the contractor shall at all times abide by all existing Labour enactments and rules made there under, regulations, notifications and bye laws of state or Central Government or local authority and any other Labour law (including rules) regulations, bye laws that may be passed or notification under any labour law in future either by the state or the central government or the local authority. Salient features of some of the major labour laws that are applicable to construction industry are given hereinafter. The contractor shall keep the Owner indemnified in case any action is taken against the Owner by the competent authority on account of the contravention of any of the provisions of any Act of rules made there under regulations or notifications including amendments. If the Owner is caused to pay or reimburse such amounts, as may be necessary to cause or observe or for non-observance of the provisions stipulated in the notifications in the amendments/ bye/Laws/acts/rules/regulations/including amendments if any on the part of contractor, the Engineer-in-Charge shall have the right to deduct such amounts from any money due to the contractor. The Engineer-in-Charge shall also have



right to recover from the contractor any sum required or estimated to be required for making good the loss or damage suffered by the Owner.

The employees of the contractor and the sub-contractors in no case shall be treated as the employees of the Owner at any point of time.

Salient features of some of major labour laws applicable to establishments engaged in building and other construction works are as given below;

(c) **Workmen Compensation Act, 1923**

The Act provides for compensation in case of injury by accident arising out of land during the course of employment.

(d) **Payment of Gratuity Act, 1972**

Gratuity is payable to the employee under the Act on satisfaction of certain conditions on separation if an employee has completed 5 years' service or more or on death at the rate of 15 days' wages for every completed year of service. The Act is applicable to all establishments employing 10 or more employees.

(e) **Employees P.F. and Miscellaneous Provision Act, 1952**

The Act provides for monthly contributions by the Owner plus worker @ 10% or 8.33% or as amended from time to time.

The benefits payable under the Act are:

- i. Pension or family pension on retirement or death as the case may be.
- ii. Deposit linked insurance on the death in harness of the worker.
- iii. Payment of P.F, accumulation on retirement/death etc.

(f) **Maternity Benefit Act, 1951**

The Act provides for leave and some other benefits to women employee's in case of confinement or miscarriage etc.

(g) **Contract Labour (Regulation and Abolition) Act, 1970**

The Act provides for certain welfare measures to be provided by the contractor to contract labour and in case the contractor fails to provide, the same are required to be provided by the Principal Owner by Law. The Principal Owner is required to take certificate of registration and the contractor is required to take a license from the designated officer. The Act is applicable to the establishments or contractor of Principal Owner if the Owner employs 20 or more contract labour.



(h) **Minimum Wages Act, 1948**

The Owner is supposed to pay not less than the Minimum Wages fixed by appropriate Government as per provision of the Act if the employment is a scheduled employment.

(i) **Payment of Wages Act, 1936**

It lies down as to by what date the wages are to be paid, when it will be paid, and what deductions can be made from the wages of the workers.

(j) **Equal Remuneration Act, 1979**

The Act provides for payment of equal wages for work of equal nature to Male and Female workers and for not making discrimination against female employees in the matters of transfers, training and promotions etc.

(k) **Payment of Bonus Act, 1965**

The Act is applicable to all establishments employing 20 or more workmen. The Act provides for payment of annual bonus subject to a minimum of 8.33% of the wages and maximum of 20% of wages to employees drawing Rs.3500/-P.M. or less. The bonus to be paid to employees getting Rs.2500/-P.M. or above up to Rs.3500/-P.M. shall be worked out by taking wages as Rs.2500/-per month only. The Updated amendments of act shall apply completely.

(l) **Industrial Disputes Act, 1947**

The Act Lays down the machinery and procedure for resolution of industrial dispute, in what situations a strike or lockout becomes illegal and what are the requirements for Laying off or retrenching the employees or closing down the establishment.

(m) **Industrial Employment (Standing Orders) Act, 1946**

It is applicable to all establishments employing 100 or more workmen (employment size reduced by some of the states and Central Government to 50) The act provides for laying down rules governing the conditions of employment by the Owner on matters provided in the Act and get the same certified by the designated authority.

(n) **Trade Unions Act, 1926**

The Act lays down the procedure for registration of trade unions of workmen and Owners. The trade unions registered under the Act have been given certain immunities from civil and criminal liabilities.

(o) **Child Labour (Prohibition & Regulation) Act, 1986**



The Act prohibits employment of children below 14 years of age in certain occupations and processes and provides for regulation of employment of children in all other occupations and process, employment of Child Labour is prohibited in Building and Construction Industry.

(p) **Inter State Migrant Workmen's (Regulation of Employment & Condition of Service) Act, 1979**

The Act is applicable to an establishment which have 5 employs or more interstate migrant workmen through an intermediary (who has recruited workmen in one state for employment in the establishment in another state) The interstate migrant workmen in an establishment to which this act becomes applicable are required to be provided certain facilities such as housing, medical aid, traveling expenses from home up to the establishment and back etc.

(q) **The building and other Construction Workers (Regulation of Employment and Condition of Service) Act, 1996 and the Cess Act, 1996**

All establishments who carry on any building or other construction work and employ 10 or more workers are covered under this Act. All such establishments are required to pay cess at the rate not exceeding 2% of the cost of construction as may be notified by the Government. The Owner of the establishment is required to provide safety Measures at the building or construction work and other welfare measures, such as Canteens, First Aid Facilities, Ambulance, Housing accommodation for workers etc. The Owner to whom the Act applies has to obtain a registration certificate from the Registering officer appointed by the Government.

However, the contractor shall follow all the various acts with latest amendments.

3.4.24 Indemnity Bond

For the equipment / material, it will be the responsibility of the Contractor to take delivery, unload and store the materials at Site and execute an Indemnity Bond and obtain authorization letter from Owner as per pro forma enclosed at Section-5-'Form for Indemnity Bond to be executed by the Contractor', in favour of the Owner against loss, damage and any risks involved for the full value of the materials. This Indemnity Bond shall be furnished by the Contractor before commencement of the supplies and shall be valid till the scheduled date of Taking Over of the equipment by the Owner.

3.4.25 Income taxes on staff

The contractor's staff, personnel and labour shall be Liable to pay personnel income taxes in the Owner's country of such of their salaries and wages, as are chargeable under the



laws and regulations from the time being in force and the contractor shall perform such duties in regard to such deductions thereof as may be imposed on him by such laws and regulations.

3.4.26 Details to be Confidential

The contractor shall treat the details of the contract as private and confidential; save in so far as may be necessary for the purposes thereof and shall not publish or disclose the same or any particulars thereof in any trade or technical paper or elsewhere without the prior consent in writing of the Engineer-in-Charge. If any dispute arises as to the necessity of any publication or disclosure for the purpose of the contract the same shall, be referred to the decision of the Owner whose award shall be final.

3.4.27 Drawing and Photographs of the Works

The contractor shall not disclose details of drawings furnished to him, drawings submitted by him and approved by the engineer-in-Charge and Works on which he is engaged without the prior approval of the Engineer-in-Charge in writing to anyone. No photographs of the works or any part thereof or plant employed thereon shall be taken or permitted by the contractor to be taken by any of his employees without the prior approval of the Engineer-in-Charge in writing and no such photographs shall be published or otherwise circulated without the approval of the Engineer-in-Charge in writing.

The Apprentices Act, 1961

The contractor shall duly comply with the provisions of the latest apprentices Act, the rules made there under and the orders that may be issued from time to time under the said act and the said rules and on his failure or neglect to do so, he shall be subject to all liabilities and penalties provided by the said Act and said rules.

3.4.28 Engineer-in-Charge's Authority to Correct Errors

The Engineer-in-Charge shall at the request of the contractor or at his own initiative subject to the provisions of this clause and with retrospective effect from the date of this contract have authority to make a determination correcting any manifest error (including for the avoidance of doubt and without prejudice of the Engineer-in-charge's authority in this regard any error of spelling grammar or punctuation and any omission inclusion or misplacement of text) in any of this contract provided always that;

(a) The Engineer-in-Charge before making such determination shall by notice to contractor provide him with a draft thereof and give him reasonable time in which to comment on the draft.



(b) The Engineer-in-Charge shall in making such determination take into consideration the presumed intentions of the parties the wording of any provision of the conditions of the contract for use and any comments received by the contractor on the draft determination provided to him under para (a) of this sub clause.

(c) The Engineer-in-Charge shall provide the contractor with a copy of the determination made by him.

3.5 MATERIALS, PLANT AND WORKMANSHIP

3.5.1 Quality of Materials, plant, Machinery and workmanship

All materials, plant and workmanship shall be:

(a) Of the respective kind described in the contract and in accordance with the Engineer-in-Charge's instructions and

(b) Subjected from time to time, to such tests as the Engineer-in-charge may require at the place of manufacturer, fabrication or preparation or on the site or at such other places as may be specified in the contract as decided by the Engineer-in-Charge.

The contractor shall provide such assistance, labour, electricity, fuels, stores, tools and tackles apparatus and instruments as are normally required for examining, measuring and testing any materials or plant and shall supply samples or materials before incorporation in the works for testing as may be selected and required by the Engineer-in-Charge.

3.5.2 a) Field test laboratory

The contractual agency will maintain a full-fledged field laboratory, where all equipment to conduct tests for quality control of materials / works executed shall be kept, so that all field tests of all the components of this contract can be carried out without any hindrance. Proper records of all tests shall be maintained. Copies of all tests conducted in field laboratory shall be given to Engineer-in-Charge. The staff of Owner will have access to this laboratory and will have power to conduct/supervise field tests of various material /equipment any time in their presence. The total cost of establishing/maintenance and conducting field tests shall be borne by the contractor.

(b) Cost of samples

All samples shall be prepared and supplied by the contractor at his own cost.

3.5.3 Testing from outside laboratory

(a) The Owner reserve its right to get material / works tested from some reputed outside field laboratory such as NIT/Tripura, CPRI/ ERADA/NABL accredited Lab and



contractual agency will have no objections for same whatsoever. The cost of making such test samples and its transportation to such tests laboratory etc. shall be borne by contractor including, **the fees of laboratory for such tests.**

(b) TSECL reserves its right to get any material tested from outside reputed test house as referred above for testing, to ensure quality of all material. But in case of failure of any lot of material, all the work executed with that lot of material shall be rejected.

(c) Sampling of work in progress shall be carried out by representative of Engineer-in-Charge, and shall be got tested from reputed test house as referred above for quality control.

3.5.4 Inspection facilities

(a) The Engineer-in-Charge and any person authorized by him shall at all reasonable times have access to the site and to all workshop and places where materials or plant are being manufactured fabricated or prepared for the works and the contractor shall afford every facility for and every assistance in obtaining the right to such access.

(b) Inspection and Testing

The Engineer-in-Charge shall be entitled during manufacture, fabrication or preparation of inspection and test the materials and plant to be supplied under the contract. If materials or plant are being manufactured, fabricated or prepared in workshop of places other than those of the contractor, the contractor shall obtain permission for the Engineer-in-Charge to carry out such inspection and testing in those workshops or places, such inspection or testing shall not release the contractor from any obligations under the contract.

(c) Dates for inspection and testing

The contractor shall agree with the Engineer-in-Charge on the time and place for the inspection of testing of any materials or plant as provided in the contract. The Engineer-in-Charge shall give the contractor not less than 24 hours' notice of his intention to carry out the inspection or to attend the tests. If the Engineer-in-Charge, or his duly authorized representative does not attend on the date agreed, the contractor may unless otherwise instructed by the Engineer-in-Charge proceed with the tests, which shall be deemed to have been made in the presence of the Engineer-in-Charge.

(d) Rejection

If at the time and place agreed in accordance with the sub clause 3.5.4.C, the materials or plant are not ready for inspection or testing or if as a result of inspection or testing referred to in this clause the Engineer-in-Charge determines that the materials or plant are defective



or otherwise not in accordance with the contract he may reject the materials or plant and shall notify the contractor thereof immediately. The notice shall state the Engineer-in-Charge objection with reasons. The contractor shall then promptly make good the defect or ensure that rejected materials or plant comply with the contract.

3.5.5 Examination of work before covering up

No part of the works shall be covered up or put out of view, without the prior approval of the Engineer-in-Charge and the contractor shall afford full opportunity for the Engineer-in-Charge to examine and measure any such part of works which is about to be covered up or put out of view and to examine before any part of the works is placed thereon. The contractor shall give notice to the Engineer-in-Charge whenever any such part of the works is ready or about to be ready for examination and the Engineer-in-Charge shall unless he considers it is unnecessary to examine such part of the works.

3.6 SUSPENSION OF WORK

3.6.1 SUSPENSION OF WORK

The contractor shall on the instructions of Engineer-in-charge suspend the progress of the works or any part thereof for such time and in such manner as the Engineer-in-Charge may consider necessary and shall, during such suspension properly protect and secure the works or such part thereof so far as is necessary in the opinion of the Engineer-in-Charge. Unless such suspension is:

- (a) otherwise provided for in the contract or
- (b) necessary by reason of some default of or breach of contract by the contractor for which he is responsible or
- (c) Necessary for the proper execution of the works or for the safety of the works or any part thereof save to the extent that such necessity arises from any act or default by the Engineer-in-Charge or the Owner or from any of the risks defined in sub clause 3.4.12 shall apply.

3.6.2 Engineer-in-Charge's Determination Following Suspension

Where, pursuant of sub clause 6.6.1 this sub clause applies that the Engineer-in-Charge shall determine any extension of time for which the contractor is entitled under the contract, determine any extension of time for which the contractor is entitled under sub clause 3.7.4



3.6.3 Suspension lasting more than 90 days

If the progress of the works or any part thereof is suspended on the instructions of the Engineer-in-Charge and if permission to resume work is not given by the Engineer-in-Charge within a period of 90 days from the date of suspension then unless such suspension is within paragraph (a), (b) or (c) of sub clause 3.6, the contractor may give notice to the Engineer-in-Charge requiring permission within 30 days from the receipt thereof to proceed with the works or that part thereof in regard to which progress is suspended, if within the said time, such permission is not granted, the contractor may, but is not bound to, treat the suspension where it effects part only of the works as an omission of such part under clause 3.10.0 by giving a further notice to the Engineer-in-Charge to that effect or where it effect the whole of the works treat the suspension as an event of default by the Owner and terminate his employment under the contract in accordance with the provisions of sub clause 3.21.1 whereupon the provisions of sub clause 3.21.2 and 3.21.3 shall apply.

3.7 COMMENCEMENT AND DELAYS

3.7.1 COMMENCEMENT OF WORK

The contractor shall commence the works within the period specified in the tender after the receipt by him of an order in writing to this effect from the Engineer-in-Charge and shall proceed with the works due expedition and without delay except as may be expressly sanctioned or ordered by the Engineer-in-Charge or be wholly beyond the contractor's control.

3.7.2 Possession of site

The Engineer-in-Charge will issue a written order to commence the works, give to the contractor possession of so much of the site as may be required to enable the contractor to commence and proceed with the construction of the works in accordance with the program if any, and otherwise in accordance with such reasonable proposals, of the contractor as he shall by giving notice in writing to the Engineer-in-Charge. The Engineer-in-Charge will from time to time, as the works proceed, give to the contractor possession of such further portions of the site as may be required to enable the contractor to proceed with the execution of the works, in accordance with the said program or proposals as the case may be.

If the contractor suffers from failure on the part of the Owner to give possession in accordance with the terms of this clause, the Engineer-in-Charge shall on the request of the contractor grant an extension of time for the completion of the works.



3.7.3 Time for completion

The whole of the works and, if applicable any section required to be completed within a particular time as stated in the bid shall be completed in accordance with the provision specified in Notice for the time stated for completion of the whole of the works or the section calculated from the commencement date or such extended time as may be allowed under sub clause 3.7.4.

3.7.4 Extension of Time

TSECL may consider granting **time extension** for completion of the work if it is felt absolutely essential on fulfilment of following conditions by the Contractor: -

- a)** The contractor must apply to the Engineer-In-charge in writing for extension of time so required justifying the necessity.
- b)** Such application must state **the grounds** which hindered the contractor in the execution of the work within the time as stipulated in the contract document.
- c)** Such application must be made within **07days** of the date on which such hindrance had arisen.
- d)** The **Engineer-in charge** must be of the opinion that the grounds shown for the extension of time are reasonable and without extension of such time completion of the work is practically impossible.
- e)** **The Engineer-In-Charge** will have full powers, but the orders on the application of the Contractor accepted by the Authorities higher than the Engineer-In-Charge shall be issued by him only after written approval from the concerned authority higher than Engineer-In-Charge.
- f)** The opinion of the **Engineer-in-charge**, whether the grounds shown for the **time are or are not reasonable is final. If the Engineer-in-charge is of the** opinion that the grounds shown by the supplier/ contractor are not reasonable and declines to grant extension to time, the supplier / contractor cannot challenge.

3.7.5 Interim Determination of Extension

Provided also that where an event has a continuing effect such that it is not practicable for the contractor to submit detailed particulars within the period of 30days referred to in sub clause 6.7.4 he shall never the less be entitled to an extension of time provided that he has submitted to the Engineer-in-Charge interim particulars at intervals of not more than 30days and final particulars within 30days of the end of the effect resulting from the event. On receipt of such interim particular, the Engineer-in-Charge shall without undue delay make



an interim determination of extension of time and on receipt of final particulars of the Engineer-in-Charge shall review all the circumstances and shall determine an overall extension of time in regard to the event, in both such cases the Engineer-in-Charge shall make his determination and shall notify the contractor of the determination.

3.7.6 Restriction of working hours

Subject to any provisions contrary to that contained in the contract, none of the works shall save as hereinafter provided be carried on during the night or on Locally recognized days of rest without the prior consent of the Engineer-in-Charge except when work is unavoidable or absolutely necessary for the saving of life or property or for the safety of the works in which case the contractor shall immediately advise the Engineer-in-Charge provided that the provisions of this sub clause shall not be applicable in the case of any work which is customary to carry out by multiple shifts.

3.7.7 Rate of Progress

If for any reason, which does not entitle the contractor to an extension of time, the rate of progress of the works or any section, is at any time in the opinion of the Engineer-in-Charge too slow to comply with the time for completion, the Engineer-in-Charge shall so notify the contractor who shall thereupon take such steps as are necessary subject to the consent of Engineer-in-Charge to expedite progress so as to comply with the time for completion. The contractor shall not be entitled to any additional payment for the taking such steps. If as a result of any notice given by the Engineer-in-Charge under this sub clause the contractor considers that it is necessary to do any work at night or on locally recognized days of rest he shall be entitled to seek the consent of the Engineer-in-Charge to do so. Provided that if any steps, taken by the contractor in meeting his obligation under this clause, involves the Owner additional supervision costs shall after due, consultation with the contractor by the Owner, may be deducted by the Owners from any money due or to become due to contractor by the Engineer-in-Charge. The Engineer-in-Charge shall notify the contractor accordingly. The Engineer-in-Charge also reserves the rights to withhold/levy liquidated damages at the discretion of the Owner, at any stage of execution of work, if the desired progress is not achieved as per the schedule at the rate **of 1% per week subject to a maximum of 5% of the Contract price.**

3.7.8 Liquidated Damages for Delay

If the Contractor fails to comply with the Time for Completion, in accordance with Sub-Clause 3.7.7, then the Contractor shall pay at the rate **of 1% per week subject to a maximum of 5% of the Contract price.** to the Owner the relevant sum stated in the Bid as



liquidated damages for such default for every week or part thereof which shall elapse between the relevant Time for Completion and the date stated in a Taking-Over Certificate of the whole of the works or the relevant section, subject to the applicable limit stated in the bid. The Owner may, without prejudice to any other method of recovery, deduct the amount towards such damages from any money due or to become due to the Contractor. The payment or deduction of such damages shall not relieve the contractor from his obligations to complete the works, or from any other of his obligation and liabilities under the contract.

3.7.9 Taking over / Completion Certificate

When the whole work has been substantially completed and have satisfactorily passed any tests on completion prescribed by the contract, the contractor may give a notice to that effect to the Engineer-in-Charge, accompanied by a written undertaking stating the remaining of the works to be completed within the specified time. Such notice and undertaking shall be deemed to be a request by the contractor for the Engineer-in-Charge to issue a Taking over Certificate in respect of the completion of whole works. The Engineer-in-Charge shall within 21 days of the date of delivery of such notice, with a copy to the Owner, issue to the contractor, either a provisional taking over certificate specifying the list of outstanding work ("Punch List") required to be completed along with specified for completion of the same or list specifying all the work which in the Engineer-in-Charge's opinion is required to be done by the contractor before the issue of such certificate. The Engineer-in-Charge shall also notify the contractor of any defects in the works affecting substantial completion that may appear after such instructions and before completion of the works specified therein. Otherwise, the contractor shall be entitled to receive such taking over Certificate within 21 days of completion of whole of works to the satisfaction of the Engineer-in-Charge of the works so specified and remedying any defects so notified.

In the event of the contractor completing the whole of the works, or any section before the stipulated time, the right to take over the same shall lie with the Owner only.

Contractor shall have no claim whatsoever on this account.

3.8 DEFECT LIABILITIES

The expression of defect liability period shall mean the defects liability period to be calculated from the date of issuance of Taking over Certificate on completion of whole of the work and not from the provisional Taking over Certificate/Completion Certificate issued by Engineer-in-Charge in between period i.e. before completion of whole work.



3.8.1 DEFECT LIABILITIES PERIOD

The defect liability period will be One year (12 months) from the date successful commissioning or from the date of issuance of Taking over Certificate on completion of whole of the work. The contractor is required to maintain the minimum work force at site to execute this work during liabilities period, as determined by the Engineer in charge.

3.8.2 Cost of Remedying Defects

All works shall be executed by the contractor at his own cost if the necessity. Thereof is in the opinion of the Engineer-in-Charge, due to;

- (a) the use of materials, plant or workmanship not in accordance with the contract, or
- (b) where the contractor is responsible for the design of part of the works any fault in such design or
- (c) The neglect, failure on the part of the contractor to comply with any obligation, expressed or implied on the contractor's part under the contract.

3.8.3 Contractor's Failure to Carry out Instructions

In case of default on the part of the contractor in carrying out such instructions within a reasonable time, the Owner shall be entitled to employ and pay other persons to carry out the same and if such work is in the opinion of the Engineer-in-Charge, the contractor was liable to do at his own cost under the contract, then, all costs consequent thereupon or incidental thereto shall be determined by the Engineer-in-Charge and shall be recoverable from the contractor by the Owner and may be deducted by the Owner from any money due or to become due to the contractor and the Engineer-in-Charge shall notify the contractor accordingly.

3.10 ALTERATIONS, ADDITIONS AND OMISSIONS

3.10.1 Variations

The Engineer-in-Charge shall have power:

- (a) To make alteration in, omissions from, additions to or substitutions from the original specifications, drawings, designs and instructions that may appear to him to be necessary or advisable during the progress of the work and
- (b) To omit a part of the works in case of non-availability of a site or for any other reasons and the contractor shall be bound to carry out the works in accordance with any instructions to him in writing signed by the Engineer-in-Charge and such alterations, omissions, additions or substituted work which the contractor may be directed to do in the manner



specified above on the same conditions in all respects including price on which he agreed to do the main work except as hereafter provided.

(c) The contractor shall be bound to carry out in accordance any instructions, which may be given to him in writing by the Engineer-in-Charge and such alterations, omission, additions and substitutions shall not invalidate the contract.

(d) The time for completion of work shall in the event of any deviations resulting in additional cost over the tendered value sum being ordered, be extended, if requested by the contractor, in proportion, which the additional cost of the altered, additional or substituted work, bears to the original tendered value.

3.10.2 Valuations of Variations

Rate for such altered, additional or substituted work shall be determined by the Engineer-in-Charge as follows:

(a) If the rate for which altered, additional or substituted item or work is specified in the bill of quantities, the contractor shall carry out the altered, additional or substituted items at the same rate. In the case of composite tenders when two or more bills of quantities may form part of the contract the applicable rate shall be taken from the bill of quantities of that particular part in which the deviation is involved, failing that at lowest applicable rate for the same item of work in the other bill of quantities.

(b) If the rate for any altered, additional or substituted item of work cannot be determined in the manner specified in sub paras (a)&(b) above, the contractor shall within 15 days of the date of receipt of the order to carry out the said work, inform the Engineer-in-Charge of the rate which he proposes to claim for such item of work, supported by analysis of the rate claimed and the Engineer-in-Charge shall within three months thereafter, after giving due consideration to the rates claimed by the contractor, determine the rate on the basis of market rate(s). In the event of the contractor failing to inform the Engineer-in-Charge within the stipulated period of time, the rate which he proposes to claim the rate for such item shall be determined by the Engineer-in-Charge on the basis of special condition of contract.

3.10.3 Valuations of Variations

(a) Quoted rates for all items shall be firm, fixed and binding on the contractor irrespective of any variations (on plus or minus side) of quantities of individual items stated in Bill of Quantities.



3.11 PROCEDURE FOR CLAIMS

3.11.1 Notice to claims

Notwithstanding any other provision of the contract, if the contractor intends to claim any additional payment pursuant to any clause of these conditions or otherwise, he shall give notice of his intention to the Engineer-in-Charge, within 14 days after the event giving rise to the claim has first arisen.

3.11.2 Contemporary Records

Upon the happening of the event referred to in sub clause 3.11.1, the contractor shall keep such contemporary records as may reasonably be necessary to support any claim he may subsequently wish to make. Without necessarily admitting the Owner's liability, the Engineer-in-Charge shall on receipt of a notice under sub clause 3.11.1, inspect such contemporary records and may instruct the contractor to keep any further contemporary records as are reasonable and may be material to the claims of which notice has been given. The contractor shall permit the Engineer-in-charge to inspect all the records kept pursuant to this sub clause and shall supply him with copies thereof as and when the Engineer-in-Charge so instructs.

3.11.3 Substantiation of Claims

Within 14 days, or such other reasonable time as may be agreed to by the Engineer-in-Charge of giving notice under sub clause 3.11.1, the contractor shall send to the Engineer-in-Charge an account giving detailed particulars of the amount claimed and the grounds upon which the claim is based. Where the event giving rise to the claim has a continuing effect, such account shall be considered to be an interim account and the contractor shall, at such intervals as the Engineer-in-Charge may reasonably require, send further interim accounts giving the accumulated amount of the claim and any further grounds upon which it is based. In cases where interim accounts are sent to the Engineer-in-Charge, the contractor shall send a final account within 14 days of the end of the effect resulting from the event. The contractor shall, if required by the Engineer-in-Charge to do so, send copy of all accounts to the Engineer-in-Charge pursuant to this sub clause.

3.11.4 Failure to Comply

If the contractor fails to comply with any of the provisions of this clause in respect of any claim which he seeks to make, his entitlement to payment in respect thereof shall not exceed such amount as the Engineer-in-Charge or any arbitrators appointed pursuant to sub clause 3.19.3 assessing the claims, considers to be verified by the contemporary records (whether or not such records were brought to the Engineer-in-Charge's notice).



3.11.5 Payments of claims

The contractor shall be entitled to have included in any interim payment certified by the Engineer-in-charge pursuant to clause 3.15.0 such amount in respect of any claim as the Engineer-in-charge, may consider due to the contractor provided that the contractor has supplied sufficient particulars to enable the Engineer-in-Charge to determine the amount due. If such particulars are insufficient to substantiate the whole of the claim, the contractor shall be entitled to payment in respect of such part of the claim as such particulars may substantiate to the satisfaction of the Engineer-in-Charge. The Engineer-in-Charge shall notify the contractor of any determination made under this sub clause.

3.12 CONTRACTOR'S EQUIPMENTS, TEMPORARY WORKS AND MATERIALS

3.12.1 Contractor's equipment, Temporary Works and Materials use for the Works

All contractor's equipment, temporary works and materials provided by the contractor shall, when brought on to the site, be needed to be exclusively indented for the execution of the works and the contractor shall not remove the same or any part thereof, except for the purpose of moving it from one part of the site to another, without the consent of the Engineer-in-Charge. Provided that consent shall not be required for vehicles engaged in transporting any staff, labour, contractor's equipment, temporary works, plant or materials to or from the site.

3.12.3 Owner Not Liable for Damage

The Owner shall not at any time be liable, as mentioned in clause 3.4.10 and 3.17.0, for the loss or of damage to any of the said contractor' equipment, temporary works or materials.

3.13 MEASUREMENTS

3.13.1 Measurements of work executed

The contractor shall, without extra charges, provide all assistance with every appliance, labour and other things necessary for measurements and recording levels.

Except where any general or detailed description of the work expressly shows to the contrary, measurements shall be taken in accordance with the procedure set forth in the specifications notwithstanding any provisions in the relevant Indian Standard Method of Measurement or any general or local custom. In the case of items which are not covered by specifications, measurement shall be taken in accordance with the relevant standard method of measurement issued by the Bureau of Indian Standards and if for any item no such standard is available then a mutually agreed method shall be followed.



The contractor shall give not less than seven days' notice to the Engineer-in-Charge or his authorized representatives in charge of work before covering up or otherwise placing beyond the reach of measurement. Any work in order that the same may be measured and correct dimensions thereof be taken before the same is covered up or placed beyond the reach of any work without consent in writing of the Engineer-in-Charge or his authorized representative in charge of the work who shall within the aforesaid period of seven days inspect, the work, and if any work shall be covered up or placed beyond the reach of measurement without such notice having been given or the Engineer-in-Charge consent not being obtained in writing, the same shall be uncovered at the contractor's expense, or in default thereof no payment or allowance shall be made for such work or the materials with which the same was executed.

Engineer-in-Charge or his authorized representative may cause either themselves or through another officer of the TSECL to check the measurements recorded jointly or otherwise as aforesaid and all provisions stipulated herein above shall be applicable to such checking of measurement or levels.

It is also a term of this contract that recording of measurement of any item of work in the measurement book and/or its payment of the interim, on account or final bill shall not be considered as conclusive evidence as to the sufficiency of any work or material to which it relates nor shall it relieve the contractor from liabilities from any over measurement or defects noticed till completion of the Defects Liabilities Period.

3.14 SUB –CONTRACTING

3.14.1 SUB –CONTRACTING

That the contractor shall not assign or sublet any part of the work to a sub-contractor, without the prior written consent of the Owner. Such written consent/ permission to appoint sub-contractor, however, shall not relieve the contractor from any of his responsibilities, obligations and liabilities under the contract. The contractor shall be responsible for acts, defaults and neglect of all sub-contractors and their agents and workmen. Any permission to sub contract parts of the work shall not relieve the contractor from any of his responsibilities, obligations and Liabilities under this contract Agreement.

That in the event of appointment of a sub-contractor by the contractor without prior consent all in case such appointment of sub-contractor, is not approved by the Owner or there is breach of any other obligations of the contract, the Owner shall have a right to initiate the appropriate proceedings including blacklisting the contractor.



However, the contractor may sub-let the work to the extent of 50% of the total contract value with the prior approval of the Owner. However, the eligibility of the sub-contractor will be assessed on the same eligibility criteria as is prescribed for the main contract on pro-rata basis. Details of Sub-contractors to be submitted during bid submission.

3.14.2 Design requirement to be expressly stated

If in connection with any provisional sum the services to be provided include any matter of design or specification of any part of the works or of any plant to be incorporated therein, such requirement shall be expressly stated in the contract and shall be included in any nominated sub contract. The nominated sub contract shall specify that the nominated sub-contractor providing such services shall be best of engineering practices without any deviation or compromise in respect of project outcome and indemnify the contractor from and against the same and from all claims, proceedings, damages, costs, charges and expenses whatsoever arising out of or in connection with any failure to perform such obligations or to fulfil such liabilities.

3.15 CERTIFICATES AND PAYMENT

3.15.1 Monthly Statements

The contractor shall submit a statement in 3 copies to the Engineer-in-Charge by 7th day of each month for the work executed up to the end of previous month in a tabulated form approved by the Engineer-in-Charge, showing the outstanding amounts in Indian Rupees to which the Contractor Considers himself to be entitled.

3.15.2 Monthly Payments

The said statement shall be approved or amended by the Engineer-in-Charge in such a way that in his opinion, it reflects the amount due to the contractor in accordance with the contract, after deduction, of any sums which may have become due and payable by the contractor to the Owner. In case where there is difference of opinion as to the value of any item the Engineer-in-Charge's view shall prevail. Within the 14th day of the month following the receipt of the monthly statement, the Engineer-in-Charge shall determine the outstanding amounts due to the contractor and shall issue to the contractor a certificate called "Interim Payment Certificate" certifying the amount due to the contractor. However, the Engineer-in-Charge may recommend advance payment against on account of bills when there is likely to be delay in authorizing payments for some special reasons which should be recorded.



3.15.3 Correction of Certificates

In any Latest Interim Payment Certificate, the Engineer-in-Charge may make any correction or modifications in any previous interim payment certificate which shall have been issued by him and shall have the authority, if any work is not being carried out to his satisfaction, to omit or reduce the value of such work while determining the outstanding amounts for latest Interim Payment Certificate.

3.15.4 Statement at completion

Not later than 90days after the issue of the Taking Over Certificate in respect of the whole of the works, the contractor shall submit to the Engineer-in-Charge 3 copies of a statement at completion with supporting documents showing in details, in the form approved by the Engineer-in-Charge:

- (a) The final value of all work done in accordance with the contract upto the date stated in such Taking over Certificate.
- (b) Any further sums which the contractors consider to be due.
- (c) A set of completion drawings of all works executed at site.

3.15.5 Final statement

Not later than 60 days after the issue of the no defect liability certificate, the contractor shall submit to the Engineer-in-Charge for consideration 3 copies of a draft final statement with supporting documents showing in detail, in the form approved by the Engineer-in-Charge:

- (a) The value of all work done in accordance with the contract, and
- (b) Any further sums which the contractor considers to be due to him under the contract or otherwise.
- (c) A set of detailed completion drawings after incorporating defects so removed by him, of all works executed under the contract.

If the Engineer-in-Charge disagrees with or cannot verify any part of the draft final statement, the contractor shall submit further information as the Engineer-in-Charge may reasonably require and shall make such changes in the draft as may be agreed between them. The contractor shall then prepare and submit to the Engineer-in-Charge the final statement as agreed (for the purpose of these conditions referred to as the 'Final Statement')

If following, discussions between the Engineer-in-Charge and the contractor, and any changes to the draft final statement which may be agreed between them, it becomes



evident that a dispute exists, the Engineer-in-Charge shall deliver to the Owner an Interim Payment Certificate of those parts of the draft final statement, if any, which are not in dispute. The dispute may then be settled in accordance with clause 3.19.0. The final statement shall be agreed upon settlement of the dispute.

3.15.6 Discharge

Upon submission of the final statement, the contractor shall give to the Owner, with a copy to the Engineer-in-Charge, a written discharge confirming that the total of the final statement represents full and final settlement of all money due to the contractor arising out of or in respect of the contract.

3.15.7 Final Payment Certificate

Within two months, after the receipt of the final statement, and the written discharge, the Engineer-in-Charge shall issue to the Owner (with a copy to the contractor) a final payment certificate stating;

- (a) The outstanding amount which, in the opinion of the Engineer-in-Charge, is finally due under the contract, and
- (b) After giving credit to the Owner for all amounts previously, paid by the Owner and for all sums to which the Owner is entitled under the contract other than under sub clause 3.7.8 the balance, if any, due from the Owner to the contractor or from the contractor to the Owner as the case may be.

3.15.8 Cessation of Owner's Liability

The Owner shall not be liable to the contractor for any matter or thing arising out of or in connection with the contract or execution of the works, unless the contractor shall have included a claim in respect thereof in his final statement.

3.15.9 Time for payment

The amount due to the contractor under any interim payment certificate issued by the Engineer-in-Charge pursuant to this clause, or to any other terms of the contract, shall, subject to clause 3.7.8, be paid by the Owner to the contractor shall be referred under **Section-7(Payment terms)**.

3.15.9 Defects Liability Period Completion Certificate

The contract shall not be considered as completed until a Defects Liability Period completion certificate shall have been signed by the Engineer-in-Charge and delivered to the Owner with a copy to the contractor, stating the date on which the contractor shall have



completed his obligations to execute and complete the works and remedy any defects therein to the entire satisfaction of the Engineer-in-Charge.

The defects Liabilities certificate shall be given by the Engineer-in-Charge within 28 days after the expiration of the Defect Liabilities Period, or, if different defect liability period shall become applicable to different sections of parts of the works, the expiration of the latest such period.

3.15.9 Unfulfilled Obligations

Notwithstanding the issue of Defect Liability Period Completion Certificate the contractor and the Owner shall remain liable for the fulfilment of any obligation incurred under the provisions of the contract prior to the issue of the Defect Liability Period Completion Certificate which remains unperformed at the time such defects Liability Certificate is issued and for the purpose of determining the nature and extent of any such obligation, the contract shall be deemed to remain in force between the parties to the contract.

3.16 REMEDIES

3.16.1 Default of contractor

If the contractor is deemed by law unable to pay his debts as they fall due, or enters into voluntary or involuntary bankruptcy, liquidation or dissolution (other than a voluntary liquidation for the purpose of amalgamation or reconstruction), or becomes insolvent, or makes an arrangement with, or assignment in favour of his creditors or agrees to carry out the contract under a committee of inspection of his creditors, or if a receiver administrator, trustee or liquidator is appointed over any substantial part of his assets, or if under any law or regulation relating to reorganization arrangement or readjustment of debts, proceedings are commenced against the contractor or resolutions passed in connection with dissolution or liquidation or if any steps are taken to enforce any security interest over a substantial part of the assets of the contractor, or if any act is done or event occurs with respect to the contractor or his assets which, under any applicable law has a substantially similar effect to any of the foregoing acts or events, or has an execution levied on his goods, or if the, Engineer-in-charge certifies that in his opinion, the Contractor

(a) Has repudiated the contract, or

(b) Without reasonable excuse has failed

i. To commence the works in accordance with sub clause 3.7.1 or

ii. To proceed with the works, or any section thereof, within 28 days after, receiving notice pursuant to sub clause 3.7.7 or



(c) Has failed to comply with a notice issued or an instruction issued for removal of improper work, materials or plant within 28 days after having received it, or

(d) Despite of previous warning from the Engineer-in-Charge, in writing, is otherwise persistently or flagrantly neglecting to comply with any obligations under the contract.

Then the Owner may, after giving 14 days' notice, to the contractor, enter upon the site and works and terminate the employment of the contractor without thereby avoiding the contract or releasing the contractor from any of his obligations or liabilities under the contract, or affecting the rights and authorities conferred on the Owner or the Engineer-in-Charge by the contract, and may himself complete the works or may employ any other contractor to complete the work. The Owner or such other contractor may use for such completion so much of the contractor's equipment, Temporary works and materials as he or they may think proper and the Owner may, at any time, sell any of the said contractor's equipment, temporary works and unused plant and materials and apply the proceeds of sale in or towards the satisfaction of any sums due or which may become due to contractor from the construction under the contract.

In case the work is left by the contractor in between the contract period, the Owner has full right to forfeit his security deposit/performance guarantee and his all other due payments. The balance work shall be got done at the risk and cost of the contractor.

3.16.2 Valuation at Date of Termination

The Engineer-in-Charge shall, as soon as may be practicable after any such entry and termination by the Owner fix and determine ex-party, or by or after reference to the parties or after such investigation or enquiries as he may think fit to make or institute, and shall certify:

(a) What amount (if any) had, at the time of such entry and termination, been reasonably earned by or would reasonably accrue to the contractor in respect of the work already done by him under the contract, and

(b) The value of any of the said unused or partially used materials, any contractor's equipment and any temporary works.

(c) The valuation of balance works still remains to be executed.

3.16.3 Payment after Termination

If the Owner terminates the contractor's employment under this clause of remedies, he shall not be liable to pay the contractor any further amount (including damages) in respect of the contract until the expiration of the Defects Liabilities Period and thereafter until the costs of



execution, completion and remedying of any defects, damages for delay in completion (if any) and all other expenses incurred by the Owner have been ascertained and the amount thereof certified by the Engineer-in-charge. The contractor shall then be entitled to receive only such sum (if any) as the Engineer-in-Charge may certify would have been payable to him upon due completion by him after deducting the said amount.

If Such amount exceeds the sum which would have been payable to the contractor on due completion by him, then the contractor shall, upon demand pay to the Owner the amount of such excess and it shall be deemed a debt due by the contractor to the Owner and shall be recoverable accordingly.

3.16.4 Assignment of Benefit of Agreement

Unless prohibited by law, the contractor shall, if so instructed by the Engineer-in-Charge within 14 days of such entry and termination referred to in sub clause 3.16.1 assign to the Owner the benefit of any agreement for the supply of any goods or materials or services and/or for the execution of any work for the purpose of the contract, which the contractor may have entered into.

3.16.5 Urgent Remedial Work

If, by reason of any accident, or failure, or other event occurring to, or in connection with the works, or any part thereof, either during the works, or during the execution of the works, or during the defects liability period, any remedial or other work is, in the opinion of the Engineer-in-Charge, urgently necessary for the safety or progress of the works and the contractor is unable or unwilling at once to do such work, the Owner shall be entitled to, employ and pay other person to carry out such work as the Engineer-in-Charge may consider necessary. If the work or repair so done by the Owner is work which, in the opinion of the Engineer-in-Charge the contractor was liable to do at his own cost under the contract, then all costs consequent thereupon or incidental thereto shall determine the cost and shall be recoverable from the contractor accordingly.

3.17 SPECIAL RISKS

3.17.1 Outbreak of war

If, during the currency of the contract, there is an outbreak of war, whether war is declared or not, materially affects the execution of the works, the contractor shall unless and until the contract is terminated under the provision of this-clause, continue to use his best endeavours to complete the execution of the works, provided that the Owner shall be entitled, at any time after such outbreak of war, to terminate the contract by giving a notice to the contractor and, upon such notice being given, the contract shall, except as to the



rights of the parties under this clause and clause 3.19.0, terminate, but without prejudice to the rights of either party in respect of any antecedent breach thereof.

3.17.2 Removal of contractor's Equipment on termination

If the contract is terminated under the provisions of sub clause 3.17.1, the contractor shall with all reasonable dispatch, remove from the site of all equipment of the contractor.

3.17.3 Payment if contract terminated

If the contract is terminated as aforesaid, the contractor shall be paid by the Owner insofar as such amounts of items have not already been covered by the payments on account made to the contractor for all works executed prior to the date of termination at the rates and prices provided in the contract and in addition, the following shall also be considered for payment.

(a) The amount payable in respect of any preliminary items referred to in the bill of quantities, so far as the work or service comprised therein has been carried out or performed, and a proper proportion of any such items which have been partially carried out or performed.

(b) The costs of materials, plants or goods reasonably ordered for the works which have been delivered to the contractor or of which the contractor is legally liable to accept delivery, such materials, plant or goods becoming the property of the Owner upon such payments made by him.

Provided that against any payment due from the Owner under this sub clause, the Owner shall be entitled to be credited with any outstanding balances due from the contractor for advances in respect of contractor's equipment, materials and plant and other sums which, at the date of termination, were recoverable by the Owner from the contractor under the terms of the contract. Any sums payable under this sub clause shall be determined by the Engineer-in-Charge who shall notify the contractor accordingly.

3.18 RELEASE FROM PERFORMANCE

Payment in event of Release from Performance.

If any circumstance, outside the control of both parties, arises after the issue of the letter of acceptance which renders it impossible or unlawful for either party to fulfil his contractual obligations, or under the law governing the contract the parties are released from further performances, then the sum payable by the Owner to the contractor in respect of the work executed shall be the same as that which would have been payable under clause 3.17.0, if the contract had been terminated under the provisions of clause 3.17.0



3.19 SETTLEMENT OF DISPUTES

3.19.1 Decision of Engineer-in-Charge

If dispute of any kind whatsoever arises between the Owner and the contractor in connection with, or arising out of the contract or the execution of work, whether during the execution of the works or after their completion and whether before or after repudiation or other termination of the contract, including any dispute as to any opinion, instruction, determination, certificate or valuation of the engineer in charge, the matter of dispute shall, in the first place, be referred in writing to the engineer-in-charge, such reference shall state that it is made in pursuant to this clause. Not later than the 90th day after the day on which he received such reference, the Engineer-in-Charge shall give his decision to the contractor. Unless the contract has already been repudiated or terminated, the contractor shall, in every case, continue to proceed with the works, with all diligence. The contractor shall give effect forth with to every such decision of the Engineer-in-Charge, unless and until the same shall be revised, as here in after provided in an amicable settlement or an arbitral award.

If the contractor be dissatisfied with any decision of the Engineer-in-Charge or the Engineer-in-Charge fails to give his decision on or before 90th day after the day on which he received the reference, then the contractor may, on or before the 60th day after the day on which the said period of 90th day expired, as the case may be, give notice to the other party, his intensions to commence arbitration as herein provided -as-to the matter in dispute. Such notice shall establish the entitlement of the party giving the same to commence arbitration, as herein after provided, as to such dispute and, no arbitration in respect thereof may be commenced unless such notice is given.

If the Engineer-in-Charge has given his decision as to a matter of dispute to the contractor and no notice of intention to commence arbitration as to such dispute has been given by the contractor to the Owner on or before 60th day after the day on which contractor received copy of decision from Engineer-in-Charge, the said decision shall become final and binding upon both the parties.

3.19.2 Amicable Settlement

Where notice of intention to commence arbitration, as to a dispute, has been given in accordance with sub clause 6.19.1, the parties shall attempt to settle such disputes amicably before the commencement of arbitration. Provided that, unless the parties otherwise agree, arbitration may be commenced on or after the 56th day, after the day on



which notice of intention to commence arbitration of such disputes was given, even, if no attempt at amicable settlement thereof has been made.

3.19.3 Arbitration

- a) 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.
- b) The arbitration shall be conducted by an arbitrator, to be nominated by TSECL and he will be the sole arbitrator to conduct the arbitration.
- c) 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**.
- d) The arbitrators may, from time to time with the consent of all the parties enlarge the time for making the award.
- e) 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 out before the Engineer for the purpose of obtaining the said decision.
- f) During settlement of disputes and arbitration proceedings, both parties shall be obliged to carry out their respective obligations under the Contract.

b. Failure to comply with Engineer-in-Charge decision

Where neither the Owner or the contractor has given notice of intention to commence arbitration of a dispute within the period stated in sub clause 3.19.1 and the related decision has become final and binding, either party may, if the other party fails to comply with such decision, and without prejudice to any other rights, it may have, refer the failure to arbitration in accordance with sub clause 3.19.3. The provision of sub clause 3.19.1 and 3.19.2 shall not apply to any such reference.

c. Appointment of Arbitrator

In order to resolve the disputes or differences, which remain unresolved, the Owner will offer a panel of minimum 3 names for appointment as sole arbitrator and the contractor will have an option to select one and convey his option to the Owner and sole arbitrator so selected by the contractor will be acceptable to the Owner. However, if work is not completed so far, it will continue during the process and pendency of such arbitration.



3.20 NOTICES

3.20.1 Notice to Contractor

All the certificates, notice or instructions to be given to the contractor by the Owner or the Engineer-in-Charge under terms of the contract shall be sent by post or facsimile transmission to or left at the contractor's principal place of business or such other address as the contractor shall nominate for that purpose.

3.20.2 Notices to Owner and Engineer-in-Charge

Any notice to be given to the Owner or to the Engineer-in-Charge under the terms of the contract shall be sent by post or facsimile transmission to or left at the respective address nominated for that.

3.20.3 Change of address

Either party may change a nominated address to another address in the country where the works are being executed by prior notice to the other party, with a copy to the Engineer-in-Charge and the Engineer-in-Charge may do so by prior notice to both parties.

3.21 DEFAULT OF OWNER

3.21.1 Default of Owner

In the event of the Owner:

- a) Becoming bankrupt or, going into liquidation, other than for the purpose of a scheme of reconstruction or amalgamation, or
- b) Giving notice to the contractor that for unforeseen reasons due to economic dislocation it is impossible for him to continue to meet his contractual obligations.

The contractor shall be entitled to terminate his employment under the contract by giving notice to the Owner, with a copy to the Engineer-in-Charge. Such termination shall take effect 28 days after the giving of the notice.

3.21.2 Default of Owner

Upon the expiry of the 28 days' notice period referred to in sub clause 3.21.1, the contractor shall, notwithstanding the provisions of sub clause 3.12.1, with all, reasonable dispatch; remove from the site all contractors' equipment brought by him thereon.



3.21.3 Payment on termination

In the event of such termination, the Owner shall be under the same obligations to the contractor in regard to payment as if the contract has been terminated under the provisions of clause 3.17.0.

3.21.4 Contractors Entitlement to Suspend Work

Without prejudice to the Contractor's Entitlement to interest under sub clause 3.15.9, and to terminate under sub clause 3.21.1, the contractor may, if the Owner fails to pay the contractor the amount due under any certificate of the Engineer-in-Charge within 28 days after the expiry of the time stated in sub clause 3.15.9, within which payment is to be made, subject to any deduction that the Owner is entitled to make under the contract, after giving 28 days prior notice to the Owner, with a copy to the Engineer-in-Charge, suspend work or reduce the rate of work.

If the contractor suspends work or reduces the rate of work in accordance with the provisions of this sub clause and thereby suffers delay, the Engineer-in-Charge shall, determine any extension of time to which the contractor is entitled under sub clause

3.7.4 and shall notify the contractor accordingly.

3.21.5 Resumption of work

Where the contractor suspends work or reduces the rate of work, having given notice in accordance with sub clause 3.21.4, and the Owner subsequently pays the amount due, including interest pursuant to sub clause 3.15.9, the contractor's entitlement under the sub clause 3.21.1, shall, if notice of termination has not been given, lapse and the contractor shall resume normal working as soon as is reasonably possible.

3.22 CHANGES IN COST AND LEGISLATION/TAXATION

3.22.1 Increase or Decrease of Taxes

For the purpose of the Contract, it is agreed that the Contract Price as specified in Contract Price and Terms of Payment of the Contract Agreement is based on the taxes, duties, levies and charges prevailing at the date seven (07) days prior to the last date of bid submission (hereinafter called "Tax" in this GCC). If any rates of Tax are increased or decreased, a new Tax is introduced, an existing Tax is abolished, or any change in interpretation or application of any Tax occurs in the course of the performance of the Contract, which was or will be assessed on the Contractor in connection with performance of the Contract, an equitable adjustment of the Contract price shall be made to fully take into account any such change by addition to the Contract price or deduction therefrom, as



the case may be, in accordance with GCC Clause 3.25(Changes in Laws and Regulations) hereof. However, these adjustments would be restricted to direct transactions between the Owner and the Contractor for which the taxes and duties are reimbursable by the Owner as per the Contract. These adjustments shall not be applicable on procurement of raw materials, intermediary components etc. by the Contractor and also not applicable on the bought-out items dispatched directly from sub vendor's works to site.

In respect of raw materials, intermediary components etc and bought out items, neither the Owner or the Contractor shall be entitled to any claim arising due to increase or decrease in the rate of Tax, introduction of a new Tax or abolition of an existing Tax in the course of the performance of the Contract.

3.22.2 Other changes in Cost

To the extent that full compensation for any rise or fall in costs to the contractor is not covered by the provisions of this or other clauses in the contract, the unit rates and prices included in the contract shall be deemed to include amounts to cover the contingency of such other rise or fall in cost. No increase in the cost of material or any account required for completion of works under the contract shall be paid over and above, as described in the price adjustment **section 8**.

3.23 HEALTH AND SANITARY ARRANGEMENT FOR WORKERS

3.23.1 General

In respect of all labour directly or indirectly employed in the works for the performance of the contractor's part of this agreement, the contractor shall comply with or cause to be complied with all the rules and regulations of the local sanitary and other authorities or as framed by the Owner from time to time for the protection of health and sanitary arrangement for all workers. The contractor shall provide in the labour colony all amenities such as electricity, water and other sanitary and health arrangements. The contractor shall also provide necessary surface transportation to the place of work and back to the colony, for their personnel accommodated in the labour colony.

3.23.2 Creche

The contractor shall at his own cost provide his labour at every work place at which 50 or more women workers are ordinarily employed, two huts for the use of children under the age of 6 years; belonging to such women. One hut shall be used for infant's games, play and the other as bedroom. The huts shall not be constructed on a Lower standard than the following:



i) Thatched roofs; ii) Brick floor and walls; iii) Planks spread over the brick floor and covered with matting; arrangements for heating during winter months; iv) Suitable nos. of toilets, baths and arrangements for drinking water.

The huts shall be provided with suitable and sufficient opening for light and ventilation.

There shall be adequate provision of sweepers to keep the places clean.

There shall be two attendants at any time including during the extended working hours. Sanitary utensils shall be provided to the satisfaction of the Health Officer of the area concerned. The use of the hut shall be restricted to only children, their attendants and mothers of the children.

Where the number of women workers is more than 25 and less than 50, the contractor shall provide at least one hut and one attendant to look after the children of women workers. The size of crèche shall vary according to the number of women workers. The same be properly maintained and toys etc. shall be provided. The arrangement has to be approved by the Engineer-in-Charge.

3.24 SAFETY CODE

3.24.1 General

Contractor shall adhere to the safe construction practice and guard against hazardous and unsafe working conditions and shall comply with Owner's safety rules as set forth herein.

3.24.2 Safety Regulation

(a) In respect of all labour, directly or indirectly employed in the work for the performance of contractor's part of this agreement, the contractor shall at his own expenses arrange for all the safety provisions as per safety code of Indian Standards Institution, the Electricity Act and such other acts as applicable.

(b) The contractor shall observe and abide by all fire and safety regulations.

3.24.3 First Aid

(a) Contractor shall maintain adequate first aid facilities for its employees and labour, an MBBS doctor with assisting nurses and helpers should be available throughout the pendency of the contract.

(b) Contractor shall make outside arrangements for Ambulance service and for the treatment of injuries. Names of those providing these services shall be furnished to the Owner and their telephone numbers shall be prominently posted in contractor's field office.

(c) All critical industrial injuries shall be reported promptly to the Owner, and a copy of the contractor's report covering each personal injury requiring the attention of a physician shall be furnished to the Owner.



3.24.4 Contractor's Barricades and lighting Arrangement

Contractor shall erect and maintain barricades required in connection with his operations to guard the excavations and Hoisting Areas. These should be properly lighted during the night.

3.24.5 Excavation and Trenches

All trenches 1.2meters or more in depth shall at all times be supplied with at least one ladder for each 50 meters Length or fraction thereof.

Ladder shall be extended from bottom of the trench to at least one meter above the surface of the ground. The sides of the trenches, which are 1.5 meters in depth, shall be stepped back to give suitable slope or securely held by timber bracing, so as to avoid the danger of sides to collapse. The excavated materials shall not be placed within 1.5 meters of the edge of the trench or half of the trench width whichever is more. Cutting shall be done from top to bottom. Under no circumstances undermining or under cutting shall be done.

3.24.6 General Safety

All necessary personal safety equipment as considered adequate by the Engineer-in-Charge should be kept available for the use of the persons employed on the site and maintained in condition suitable for immediate use, and the contractor shall take adequate steps to ensure proper use of equipment by those concerned. Upon the award of work to the contractor, he will submit to the Engineer-in-Charge, two copies of a construction safety manual to cover onsite safety control for approval and agreement prior to use.

3.24.7 Cares in Handling Inflammable Gas

The contractor has to ensure all precautionary measures and exercise utmost care in handling the inflammable gas cylinders/ inflammable Liquids/paints etc. as required under the law and/ or as advised by the Fire Authorities.

3.24.8 Preservation of Peace

The contractor shall take requisite precautions and use his best endeavours to prevent any riotous or unlawful behaviour by or amongst his workmen and others employed on the works and for the preservation of peace and protection of the inhabitants and security of property in the neighbourhood of the work in the event of the Owner requiring the maintenance of a special police force at or in the vicinity of the site during the tenure of works, the expenses thereof shall be borne by the contractor and if paid by the Owner, shall be recoverable from the contractor.



3.24.9 Outbreak of Infectious Disease

The contractor shall remove from his camp such labour and their families who refuse to protective inoculation and vaccination when called upon to do so by the Engineer-in-Charges representative. Should Cholera, Plague or other infectious diseases break out, the contractor shall burn the huts, beddings, clothes and other belonging used by the infected parties and promptly erect new huts on healthy sites as required by the Engineer-in-Charge failing which, within the time specified in the Engineer-in-Charge's requisition, the work may be done by the Owner and the cost thereof recovered from the contractor.

3.24.10 Use of intoxicants

The unauthorized sale of spirits or other intoxicating beverages upon the work in any of the buildings, encampments or tenements owned, occupied, by or within the control of the contractor, is prohibited and the contractor shall exercise his influence and authority to the utmost extent to secure strict compliance with this condition.

3.25 Change in Laws and Regulations

If, after the date seven (07) days prior to the date of Bid Opening, any law, regulation, ordinance, order or by-law having the force of law is enacted, promulgated, abrogated or changed in India (which shall be deemed to include any change in interpretation or application by the competent authorities) that subsequently affects the costs and expenses of the Contractor and/or the Time for Completion, the Contract Price shall be correspondingly increased or decreased, and/or the Time for Completion shall be reasonably adjusted to the extent that the Contractor has thereby been affected in the performance of any of its obligations under the Contract. However, these adjustments would be restricted to direct transactions between the Owner and the Contractor and not on procurement of raw materials, intermediary components etc. by the Contractor for which the Owner shall be the sole judge. Notwithstanding the foregoing, such additional or reduced costs shall not be separately paid or credited if the same has already been accounted for in the price adjustment provisions where applicable.



SECTION 4: SPECIAL CONDITIONS OF CONTRACT

4.1 GENERAL

The price bid submitted by the contractor shall include all duties, taxes etc., and any other taxes that may be levied in accordance with the laws and regulations.

- a) The contractor shall submit the CAR (Contractor All Risks) policy for the awarded value of work and valid for the entire duration of the work including extending period of work, if any. The contractor shall provide to the Owner, copy of insurance policies and documents taken out by him, in pursuance of the contract, immediately after such insurance coverage. If the contractor fails to effect and keep in force insurance, as per the term of contract, the Owner may effect and keep in force such insurance and pay such premium or premiums as may be necessary for that purpose and from time to time deduct the amount so paid by the Owner as aforesaid, from any money due or which may be come due to the contractor, or recover the same as debit due from the contractor.
- b) The contractor shall be responsible for preparing all claims and make good for all damages or Loss by way of repairs and or replacement of portion of any works damaged or lost. The transfer of title shall not in any way relieve the contractor of his responsibility during the period of contract including the defect liability period.
- c) The contractor shall abide by the local laws and regulations governing labour and applicable from time to time. During continuance of the contract the contractor shall abide at all times by all existing labour enactments and rules made their under, regulations notification and byelaws of State and Central Govt. of Local authority and any other labour law (including rules, regulations bylaws that may be passed or notifications that may be issued under any labour in future either by the state or the central govt. or the local authority)
- d) Nothing shall be paid for any loss or damage done due to rains, floods, or any other act of God during the execution period, trial run & defect liability period. The payment shall be made only for material/works acceptable to the Department.
- e) The contractor shall provide suitable measuring equipment/arrangement at site for checking of various material supplied by him.
- f) In case of duplicity/variations/contradiction of terms and condition in the printed tender documents and special terms and conditions, the terms and conditions mentioned in the special terms and conditions shall prevail.



g) The Owner reserves the right of modification of layout plans, if found necessary, before actual execution of work even after designing the same, nothing extra shall be payable to the firm for these changes in the layout plan.

h) Contractual agency shall bear the cost of repairing the damages of other utility services like Roads, water, telecom, road or sewerage during excavation of electrical cable trench. Suitable measures to be adopted during road crossing and cutting of metaled portion of the road including taking prior permission from the concerned department. TSECL will not involve in the coordination with the other utility services although for the sake of the progress of the project they may take initiatives.

4.2 PENALTY AND TERMINATION OF THE CONTRACT:

In the event of contractor's failure to fulfil any of the terms and conditions of this contract, including failure to complete the contract within the stipulated period, the department shall, without prejudice to other remedies available to it, under the law enforced in the State be competent to impose all or any of the following penalties on the contract or in addition to the forfeiture of the security deposit(CPG)in full as the department may deem fit and terminate the contract after 30 days clear notice to the contractor.

4.3 DEFECTS LIABILITY PERIOD

In case the contractor fails to remedy the defects to the full satisfaction of the Engineer-in-Charge, the Owner shall be at liberty to forfeit the available security amount and get the defects remedied at the risk and cost of the contractor. The contractor is supposed to keep required staff prescribed in the bid document during the period of 12 months after completion/ commissioning of works i.e. during defects liability period.

4.4 VALIDITY OF BID

Bid submitted by the bidder shall remain valid for acceptance for a period of 180 days from the date of opening of the financial bid. The tenderers shall not be entitled during the validity of bid, to revoke or cancel bid or vary any term thereof. In case of bidder revoking or cancelling his bid or varying any term in regard thereof, the bidder's earnest money deposit shall be forfeited by the Owner.

4.5 TEMPORARY POWER SUPPLY

Contractor shall obtain temporary power connection from the local body TSECL for the construction purpose. The contractor shall at his own cost make arrangement for temporary distribution of power to the work site. Contractor shall at his own cost remove all the wires, pipes, ballies etc. after completion of work.



4.6 TEMPORARY WATER SUPPLY

For construction purpose the contractor has to rely on ground/surface water supply. Contractor at his own cost and initiative shall arrange suitable quality of water and its distribution to the work sites for construction, curing and testing purposes. The quality of water for construction purposes must satisfy the provision of relevant codes. Contractor shall remove at his own cost all equipment, pumps etc. after completion of work.

4.7 CONTRACTOR'S OFFICE & STORE

Any land provided by the Owner to the Contractor within the provisions hereof for labour hutments, stores, temporary offices etc. shall be on temporary basis till completion of works and shall not create any right, title or interest whatsoever in the contract herein or in respect thereof.

The Contractor shall also be responsible for establishing a suitable furnished office accommodation of plinth area not less than 150 Square Meter for the Engineer-in-charge, Supervisory Staff of the Corporation and Consultant / Construction Manager as directed by the Engineer-in-Charge. The contractor shall also be responsible for establishing suitable storage area. The Contractor's storage will be within the site premises. All the incoming and outgoing materials, equipment, tools, tackle and any other items related to said work shall be entered into the register kept for this purpose and shall be in the custody of Contractor, however Department does not hold any responsibility for any loss or damage of Contractor's material etc.

All loading/unloading, of materials at work-site shall be your responsibility. Involvement of Crane/Hydra/Tractor/Trailer for this type of work shall be in contractor's scope. Adequate weather protection shall be provided by the contractor to keep the materials safe from sun & rain by providing covered storage space as well as using tarpaulins. The contractor at his own shall arrange Water and Electricity Power at his cost.

4.8 SITE MEETING

Weekly site meeting, to be attended by representatives of the Engineer-in-charge and the contractor shall be held every Wednesday for progress monitoring and other issues of construction. In the event of Wednesday being a holiday, the meeting will be held on the next working day.



4.9 SUBMISSION OF REPORT

Contractor shall submit the following reports, at its expense, during the duration of the Contract. Distribution of all reports shall be in accordance with the Report Distribution Matrix.

Daily Manpower and Equipment Reports

- a) Contractor shall prepare and submit to Owner and PMC team, two copies of daily manpower reports indicating the total number of manual personnel by craft and nonmanual personnel including those of its Subcontractors working at the Site. These daily reports shall be summarized on a weekly basis and the summary submitted to Owner as well as PMC team.
- b) Contractor shall prepare and submit to Owner and PMC team, two copies of the daily equipment reports indicating major Construction Equipment in working order, including that of its Subcontractors utilized for the execution of work at the Site. These daily reports shall be summarized on a bi-weekly basis and the summary submitted to Owner along with PMC team.

Manpower Reports: Contractor shall prepare and submit to Owner and PMC team, monthly manpower report by: a) skilled; b) the total numbers of manual personnel; and c) the total number of non-manual personnel at the Site. The report shall be prepared separately for expatriates and local personnel. The monthly manpower report shall be prepared on the basis of the daily manpower reports and plotted against the projected manpower which should include employees of its Subcontractors. Additionally, these reports are to be projected for the total job duration on a quarterly time scale. Total job is to be progressed and submitted on quarterly time frequency, to the Owner as well as PMC team.

Monthly Contract Progress Report: During the duration of the Contract, Contractor shall submit to Owner and PMC team, the Monthly Contract Progress Report in duplicate. Such report shall include the following:

- a) A narrative summary of the Contract history to date, including description of progress achieved, list of significant milestone events accomplished and related dates.
- b) Narrative description of major near-term events scheduled and their impact on the Contract.
- c) A marked-up submittal of the latest issue of each construction drawing applicable to the works; and on each drawing the following information will be delineated graphically by



marking or shading and listed numerically in the upper right-hand corner, for each unique work operation covered by the Drawing:

The total quantity of work

The total quantity of work performed to date

The total quantity of work performed during the month.

d) A typed Quantity Report which summarizes the amounts of contract quantities per drawing and in total on the basis of work completed for the month, to date and total estimated for the Contract reported for each commodity specified in the Extent of Works. The Quantities to be reported and the method of measurement of quantities are defined under "Measurement of and Payment for the Works."

e) Photographs of progress of the work with soft copies in digital format.

Quarterly Cash Flow Report: Contractor's detailed cash flow report shall be updated quarterly and submitted to Owner for overall project financial planning. The report shall be based on Contractor's projected cash flow for the works to be completed and shall be consistent with "Measurement of and Payment for the Works."

Quantity Summary Report: Contractor shall prepare and submit to Owner quantity summary report route wise.

Final Contract Report:

i) Contractor shall submit a final Contract report with detailed cost breakdown to meet the requirements of Owner's code of accounts. Owner's code of accounts breakdown will include cost for items such as engineering, plant/Equipment, manual and nonmanual labour including man-hours, and Construction Equipment for the execution of the Works.

ii) Additionally, Contractor shall summarize on monthly and/or quarterly time scale, as determined by Owner.

Quality Surveillance Report: Contractor shall prepare and submit a monthly Quality Surveillance Report Implementing Contractor's quality surveillance/audit program to verify that Subcontractors furnishing the Plant/Equipment are meeting the quality requirements stated in the Contract specifications.

4.10 PRIORITISATION REVIEW

The contractor is required to execute the works as per approved schedule. However, during the period of execution, in case the necessity arises to change the priority of the construction schedule, as per requirement of the Owner, the contractor is bound to follow the



changed priority which shall be communicated to the contractor during quarterly review meeting and the contractor shall have no claim whatsoever on this account.

4.11 LIST OF DOCUMENTS TO BE MAINTAINED AT SITE BY THE CONTRACTOR

- I. Site instruction book
- II. Labour Register
- III. Hindrance Register
- IV. Material register (Materials Account Statement)
- V. Stock Register
- VI. Material Testing Register
- VII. Cable Register
- VIII. HDPE Pipe Register
- IX. Cement Register
- X. Assets Register
- XI. Daily Works Register
- XII. Measurement Book
- XIII. Daily labour employment register
- XIV. Any other documents required by the Engineer-in-Charge to check quality/ progress of work etc. will be maintained by contractor at site.

4.12 PLANNING AND REVIEW OF WORKS

The contractor shall use computer and modern project management software (like Primavera/MSP) for planning, scheduling and review of works, right from the commencement of work till completion. The contractor will employ a qualified planning Engineer experienced in use of Modern methods of planning; scheduling and cost control of projects using computers with the usage of project management software's and should be capable of performing network-based analysis.

4.13 AS BUILT DRAWINGS

As Built Drawings are to be prepared and submitted by the contractor duly certified by the Engineer-in-Charge after completion of works. The originals, in good quality transparencies, and three (3) copies of all as built drawings shall be supplied to the Engineer-in-Charge



progressively as sections of the works gets completed. All Drawings shall be submitted within one month after completion of the respective section.

As Built Drawings shall be of A0 -A4 size - (depending upon type of structure or nature of drawing) unless otherwise approved by the Engineer-in-Charge.

4.14 ASSOCIATED WORKS/OTHER CONTRACTS ON SITE

- a) The contractor shall note that other contractors would be carrying out other works within or adjacent to the site during the duration of this contract.
- b) The contractor shall not have exclusive possession of the site but shall have to liaise and co-ordinate with all other contractors and authorities carrying out works on or in the vicinity of the site and shall afford all reasonable opportunity and assistance to other contractors to carry out their works with minimum mutual interference or disruption.
- c) If the performance of any contractor is likely to interfere with the simultaneous execution of another contract, the Engineer-in-Charge shall decide which works shall take precedence, and there shall be no claim whatsoever for any delay disruption of work or cost arising out of the Engineer-in-Charge's decision.
- d) The contractor shall be deemed to have allowed in his tender of all costs arising from above causes and shall not be entitled to any payment in respect of such causes.
- e) The contractor shall carry out the work in sections as directed by the Engineer-in-Charge and hand over to other contractor in stages for carrying out other works.

4.15 INTERIM/RUNNING PAYMENT

All interim running payment shall be treated as on account payments by way of advances against final payments and not as payments for the work done or be considered as an admission of the due performance of the contract. This shall be adjustable in final bills.

4.16 TAKING OUT OF MATERIAL

No material, equipment is to be taken out of the project site by the contractor without the approval of the Engineer-in-Charge.

4.17 MATERIAL

- a) All materials including cement and steel to be arranged by the contractor himself shall conform to relevant ISI specifications, duly ISI marked and as per list of approved manufactures/makers by TSECL, also attached in the NIT.
- b) Contractor will have to supply manufacturer's certificate, certifying that material has been manufactured as per IS specification, duly supported by necessary documentation.



Wherever referred code shall be with its latest amendments.

- c) All material depicted in the NIT shall be inspected as per provision of relevant IS codes for testing of material, at the works of manufacturers, before dispatch to the site by the authorized representative of TSECL.
- d) Necessary certificate from the manufacturer for all the material brought at site shall be supplied with each lot to the Engineer-in-Charge, certifying that this lot of material has been manufactured as per standard of BIS and conform to the relevant IS codes.

4.18 QUALITY CONTROL & QUALITY ASSURANCE

The Owner reserves the right to engage a full-fledged Construction Manager / Consultant who will act as an Engineer-in-Charge on behalf of the Owner and would be responsible for administration, performance of contract, quality control, day to day monitoring etc. However, the charges of the Construction Manager/ Consultant shall be borne by the Owner.

In case the material mentioned in the Bid documents is not easily available in the market and the contractor intends to use the higher quality / grade of material with the approval of the Engineer-in-Charge, the contractor shall have no claim, what so ever on account of using the same.

4.19 INSPECTION OF MATERIALS & ISSUENCE OF MATERIAL DISPATCH CLEARANCE CERTIFICATE

General: The Owner, the Owner's Representative and Third Party Inspectors (if deployed by the Owner to assist or otherwise shall be entitled, during manufacture, fabrication and preparation at any places where work is being carried out, to inspect, examine and test the materials and workmanship, and to check the progress of manufacture, of all Plant / machinery and Materials to be supplied under the Contract. The Contractor shall give them full opportunity to inspect, examine, measure and test any work at the factory, on Site, or wherever else carried out. The Contractor shall give due notice to the Owner's Representative whenever such work is ready, before packaging, covering up or putting out of view. The notice shall be made at least 15days before the equipment / materials is ready for inspection. The Owner's Representative and/or Third-Party Inspector (if deployed) shall then either carry out the inspection, examination, measurement or testing without unreasonable delay.

Third Party Inspection: Without limiting the generality of the foregoing, the Owner may engage, Third Party Inspectors or Third-Party Inspection Agencies to act as the Owner's Representative or assist for the purposes of quality assurance and quality control testing of the Plant/ machinery, Equipment and Materials to be supplied by the Contractor, and shall



notify the Contractor accordingly. The third-party inspector or agency, as appropriate, will be authorized to carry out inspections and acceptance tests on behalf of the Owner at all-important stages of the Works, including:

- (i) Inspection at the Manufacturer's premises;
- (ii) Inspection at the Site and during execution of the project / Works;
- (iii) Inspection after erection and commissioning of the Plant/ machinery, Equipment and Materials.

After the successful completion of pre-dispatch inspection at manufacturer's place in presence of the authorized representative from TSECL, the contractor shall submit 5(Five) copies of Test Certificates to TSECL for acceptance before issuance of material dispatch clearance certificate (MDCC) of the equipment for dispatch the material at site.

Pre-Dispatch Inspection of equipment/materials shall be conducted at the risk & cost of contractor. The contractor shall also bear to & fro travelling cost, food & lodging charges of the inspecting team.

All major equipment/materials shall be dispatch by the contractor only after issuance of materials inspection clearance certificate (MICC) by authorised official of Owner unless otherwise waived by TSECL in special circumstances. In that case, inspection cost of @ 3% of the value of the materials for which in inspection to be waived will be deducted from the payment.

4.19.1 The following major materials shall be conducted inspection by the Owner's Representative or Third-Party Inspectors on the cost of Agency.

1. XLPE Power Cable & LT XLPE Cable
2. HDPE Pipes
3. Cable termination Kits (heat shrink type)
4. HT KIOSK

Materials other than listed in clause 4.19.1, Agency shall be responsible to conduct inspection by TSECL Representative a Government Approved Third-Party Agency in his risk & Cost. After the successful completion of pre-dispatch inspection at manufacturer's place, the contractor shall issue despatch clearance to manufacturer's and submit 5(Five) copies of Test Certificates to TSECL for acceptance of the equipment/materials at site.

4.20 CLERENCE FROM ELECTRICAL INSPECTOR

The contractor shall be fully responsible for carrying out all co-ordination and liaison work as may be required with Electrical Inspector or any other statutory bodies for implementation of the work. The application on behalf of TSECL for submission to the Electrical Inspector and other statutory bodies along with copies of drawings complete in all respects shall be done by the contractor & approval / certificates taken well ahead of time so that the actual commissioning of equipment is not delayed for want of inspection and approval by the inspector & statutory bodies. The contractor shall arrange the actual inspection work by



Electrical Inspector or any other body including payment of official fees paid to electrical inspector / statutory bodies shall be borne by the contractor.

4.21 CAPACITY BUIDING

DELETED

4.22 LIST OF MATERIALS

The lists of major material for this underground cabling project are as follows:

- 1. XLPE Power Cable & LT Cable (FRLS)**
- 2. HDPE Pipes**
- 3. Cable termination Kits**
- 4. HT KIOSK**

4.23 VEHICLE FOR TSECL/PMC Agency

The successful bidder shall provide one no. vehicle (Maruti Van / Echo /Scorpio) to TSECL staff / PMC supervision team for site inspection & supervision of works for entire contract period. Contractor will bear all the cost for Hiring charges, fuel, driver & maintenance etc. of the vehicle.

4.24 RESTORATION OF EXISTING UTILITY WORKS

The successful bidder shall be responsible for restoration of existing Services like as Water, Gas & Telecom lines etc. and made them in workable conditions. TSECL shall not paid extra cost for any type of restoration works.

4.25 LIST OF APPROVED MAKES FOR MATERIALS

SI.N	Equipment	Makes
1	FRLS XLPE, HV & MV Power Cable & FRLS LT Cable	All the materials will be procured from TSECL approved vendor list
2	Cable termination Kits (heat shrink type)	
3	HDPE PIPE	
4	G.I Pipe	

4.26 TIME –THE ESSENCE OF CONTRACT

4.26.1 The time and the date of completion of the Contract as stipulated in the Contract 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.

- 4.26.2 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 TSECL 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.
- 4.26.3 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.
- 4.26.4 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.
- 4.26.5 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.



SECTION 5: STANDARD BIDDING FORMAT

5.1: FORM 'I'(DECLARATION)

To,

**Dy. General Manager,
Capital Complex Electrical Division
79 Tilla, Agartala
West Tripura, Pin: 799006**

Name of Work: "Extension of H.T/L.T XLPE U.G Cable line including construction of a 200 KVA Distribution Sub-Station for providing of a service connection to the newly constructed Composite Building for accommodation of different office of PWD at Capital Complex, Khejurbagan, Agartala under ESD- Capital Complex.(Demand Load-138.104). (RCC Base Transformer Sub-Station to be Construction by PWD Department as per rule of TSECL).

NIT No: **Dated:** ___/___/202....

Sir,

*I/We am/are registered contractors with _____. Particulars of the authority, Class and tendered amount / limit up to which I/We am/are eligible to tender are furnished below:

Name of department / authority	Class / Category	Tendering Limit

It is certified (confirmed) that this registration / these registration is / are valid as on date and we shall inform the department ourselves as soon as our registration expires or is cancelled / revoked.

The Particulars of the work done are furnished / enclosed as per the eligibility criteria set out in the Press Notification/ Tender document and the Tender Fee and EMD has been deposited electronically using the Online Payment Facility provided in the Portal.

*I/We certify that we have gone through the terms and conditions as contained in the e-tender documents available on website of this work. We further confirm of having full knowledge that the above conditions are to form a part of the contract agreement executed with the successful contractor.

*I/We request; the permission may be granted to me/us to participate in the tender

a) Documents in support of fulfilling the eligibility criteria, Registration etc. placed from page no. _____ to _____.

d) Power of Attorney in the name of bidder who will sign and submit the tender.

Yours faithfully,

Contractor Name: _____

Address: - _____

Telephone No. _____

Fax No. _____



5.2: FORM 'II'(FINANCIAL INFORMATION)

Details to be furnished duly supported by figures in balance sheet / profit & loss account for the last 3 (three) years duly certified by the Chartered Accountant.

1.

Particulars	YEARS		
	2019-20	2020-21	2021-22
i. Gross Annual turnover			
ii. Profit / Loss			

2. Financial arrangements for carrying out the proposed work.

3. The following certificates are to be enclosed:

(a) Solvency Certificate from Bankers of Applicant.

Signature of Chartered Accountant with Seal

Signature of Applicant

5.3: FORM 'III' DETAILS OF ALL WORKS OF UNDER GROUNDING CABLING AT A SUPPLY VOLTAGE OF 11KV OR ABOVE COMPLETED DURING THE LAST SEVEN YEARS

Sl. No.	Name of the work & Location	Owner Details / Owner of the project	Cost of work (Rs. inCrore)	Date of Commencement as per contract	Stipulated date of completion	Actual date of completion	Litigation /Arbitration cases Pending or in Progress with details*	Name and address/ telephone number of the officer to whom Reference may be made	Reference	Remarks
1	2	3	4	5	6	7	8	9	10	11

*Indicate gross amount claimed and amount awarded by the Arbitrator.

Signature of Applicant



5.4: FORM 'IV' DETAILS OF WORK EXPERIENCE/COMPLETION CERTIFICATE AT A SUPPLY VOLTAGE OF 11KV OR ABOVE EXECUTED LAST 7 (SEVEN) YEARS.

1	Name of Work/Project & Location				
2	Name of Contractor				
3	Agreement No & Date				
4	Name and Address of the Owner/Client				
5	Agreement Amount				
6	Actual Cost of Work on Agreement				
7	Date of Start				
8	Date of Completion as per Agreement				
9	Actual date of completion				
10	Amount of compensation levied for delayed, if any				
11	Type of work Overhead line/UG Cable Line/Sub-Station, if any				
12	Preconcentrate of Expect	Outstanding	Very Good	Good	Poor
i	Quality of work				
ii	Resourcefulness				
iii	Financial Soundness				
iv	Technical efficiency				
V	General Behaviour				

Signature of Applicant

Signature with Seal of issuing
Authority (Date, Name &
Designation)



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5.5: FORM 'V' DETAILS OF STRUCTURE & ORGANISATION.

1. Name & Address of the applicant:
2. Telephone No. / Telex No. / Fax No.:
3. Legal status of the applicant (attach copies of original document defining the legal status).
 - (a) An Individual
 - (b) A proprietary firm
 - (c) A firm in partnership
 - (d) A limited company or Corporation.
4. Particulars of registration with various Government bodies (attach attested photocopy).

Organization/Place of registration	Registration No.	Validity of Registration
1.		
2.		
3.		

5. Names and Titles of Directors & Officers with designation to be concerned with this work.
6. Designation of individuals authorized to act for the organization.
7. Was the applicant ever required to suspend construction for a period of more than six months continuously after you commenced the construction? If so, give the name of the project and reasons of suspension of work.
8. Has the applicant or any constituent partner in case of partnership firm, ever abandoned the awarded work before its completion? If so, give name of the project and reasons for abandonment.
9. Has the applicant or any constituent partner in case of partnership firm, ever been debarred/ black listed for tendering in any organization at any time? If so, give details.
10. Has the applicant or any constituent partner in case of partnership firm, ever been convicted by a court of law? If so, give details.
11. In which field of Electrical Engineering construction, the applicant has specialization and interest?

5.6: FORM 'VI' DETAILS OF TECHNICAL & ADMINISTRATIVE PERSONNEL TO BE EMPLOYED FOR THE WORK (Not Mandatory).



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S No.	Designation	Total Number	Number available for this work	Name	Qualifications	Professional Experience and details of work carried out	Professionals proposed Position To be involved in this work	Remarks
1	2	3	4	5	6	7	8	9

Signature of Applicant

5.7: FORM 'VII' PERFORMANCE BANK GUARANTEE BOND. (PROFORMA OF BANK GUARANTEE FOR BID GUARANTEE (TOBE STAMPED IN ACCORDANCE WITH STAMP ACT)

The non-Judicial stamp paper should be in the name of issuing bank)

Ref.

Bank Guarantee No.

.....

Date

Tripura State Electricity Corporation Ltd.,

TSECL, Agartala, Tripura

Dear Sir,

In accordance with Invitation to bid under your NIT No.....
M/s..... having its

Registered/Head Office at..... (hereinafter called the 'Bidder')
wish to participate in the said Bid or and you, as a special favour have agreed to
accept an irrevocable and unconditional Bank Guarantee for an amount of
valid up to..... on behalf of Bidder in lieu of the Bid deposit required to be made by the bidder, as a
Condition precedent for participation in the Said

Bid. We, the Bank at having our Head Office at
..... (local address) guarantee and undertake to pay immediately on
demand by Tripura State Electricity Corporation Limited Department, the Amount



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of.....(in words & figures) without any reservation, protest, demur and recourse. Any such demand made by said 'Owner' shall be conclusive and binding on us irrespective of any dispute or difference raised by the Bidder. This Guarantee shall be irrevocable and shall remain valid up to and including.....@ If any further extension of this guarantee is required, the same shall be extended to such required period (not exceeding one year) on receiving instruction from M/s on whose behalf this guarantee is issued. In witness whereof the Bank, through its authorized officer, has set its hand and stamp on this day of

..... 20..... at

WITNESS:

.....

(Signature)

.....

(Signature)

.....

(Name)

.....

(Name)

.....

(Official Address)

.....

(OfficialAddress)

Note:

1. For the purpose of executing the Bank Guarantee, the non-judicial stamp papers of appropriate value shall be purchased in the name of Bank who issues the 'Bank Guarantee'.
2. The Bank Guarantee shall be signed on all the pages by the Bank Authorities indicating their POA nos. and should invariably be witnessed.
3. The Bank Guarantee should be in accordance with the proforma as provided. However, in case the issuing bank insists for additional paragraph for limitation of liability, the following may be added at the end of the proforma of the Bank Guarantee [i.e., end paragraph of the Bank Guarantee preceding the signature(s) of the issuing authority (ies) of the Bank Guarantee]:



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5.9: FORM 'IX' FORM OF SCHEDULE OF DEVIATIONS

We/I have carefully gone through the technical specification and the general conditions of contract and We/I have satisfied ourselves/myself and hereby confirm that our/my offer strictly conforms to the requirements of the technical specifications and general conditions of contract except for the deviations which are given below:

Sl. No	Description	Stipulation in Specification	Deviations Offered	Remarks
A	Commercial Terms (Clause No)			
B	Technical Specifications (Clause No)			

(Please use more sheets, if required).

Signature:

Name:

Dated:

Place:



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5.10: FORM 'X' FORM OF DECLARATION REGARDING BLACKLISTING/ NON-BLACKLISTING

FROM TAKING PART IN GOVT.TENDER BY TSECL/GOVT. DEPT (To be executed on Rs.100/- Stamp paper &attested by Public Notary/Executive Magistrate by the bidder)

I / We Proprietor/ Partner(s)/ Director(s) of M/S. -----hereby declare that the firm/company namely M/S.-----

has not been blacklisted or debarred in the past by TSECL or any other Government organization from taking part in Government tenders.

Or

I / We Proprietor/ Partner(s)/ Director(s) of M/S. -----hereby declare that the firm/company namely M/S.-----was blacklisted or debarred by TSECL, or any other Government Department from taking part in

Government tenders for a period of -----years w.e.f.----- . The period is over on -----and now the firm/company is entitled to take part in Government tenders.

In case the above information found false I/We are fully aware that the tender/ contract will be rejected/cancelled by Tripura State Electricity Corporation Limited and EMD/SD shall be forfeited.

In addition to the above Tripura State Electricity Corporation Limited will not be responsible to pay the bills for any completed / partially completed work.

Signature -----

Name -----

Capacity in which as signed: -----Name & address of the firm: -----

-----Date:



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5.11: FORM 'XI' FORM OF APPLICATION FOR EXTENSION OF TIME

APPLICATION FOR EXTENSION OF TIME

(Part – I)

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

3. Agreement no. _____
4. Contract amount _____
5. Date of Commencement of work as per agreement _____
6. Period allowed for completion of work (as per agreement) _____
7. Date of completion stipulated in the agreement _____
8. Actual date of completion _____
9. 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. _____
10. Period for which extension have been previously given (Copies of the previous application should be attached).
11. 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

12. Total period for which extension is now applied for on account of hindrances mentioned above.
13. Extension of time required for extra work: - _____ Months. _____ days.
14. Detailed for extra work and the amount involved: -
15.
 - 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: -
16. Total extension of time required for 11 & 12: -

Signature of Contractor



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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 recommend the extension, reasons for rejection should be given

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



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SECTION 6 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, General Terms & Conditions (GTC) shall also be applicable to the erection portion of the Works. The **Deputy 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 **Deputy 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



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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 Engineer 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.



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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.
- 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



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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



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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

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



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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. Untreated 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.



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16.4 The Contractor shall provide enough fire protection equipment of the types and number for the warehouses, 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



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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, wharf age 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



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- 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 authorised 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 Deputy 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.



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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.



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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 un-favourable 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 un favourable construction conditions shall in no way relieve the Contractor of his responsibility to perform the Works as per the Schedule.

27.0 WORK & SAFETY REGULATION

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. 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 Deputy General Manager 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



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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 this 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;



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- 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 Deputy General Manager in charge of the work within 3 days of such stoppage of work and the decision of the Deputy 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.



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- b) No employee shall be given a new assignment of work unfamiliar to him without proper introduction as to the hazard's 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



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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 CODEREQUIREMENTS

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

- i. 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.
- ii. All the equipment bases and structural steel base plates shall be grouted and finished as per these specifications unless otherwise recommended by the equipment manufacturer.
- iii. 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.

30.0 Grouting Mix

30.1 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.

30.2 Placing of Grout

30.2.1 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.

30.1.2 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.

30.2 Finishing of the Edges of the Grout



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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.

30.3 Checking of Equipment After Grouting

After the grout is set and cured, the Contractor shall check and verify the alignment of equipments, alignment of shafts of rotating machinery, the slopes of all bearing pedestals, centering of rotors with respect to their sealing bores, couplings, etc. as applicable and the like items to ensure that no displacement has taken place during grouting. The values recorded prior to grouting shall be used during such post grouting check-up and verifications. Such pre and post grout records of alignment details shall be maintained by the Contractor in a manner acceptable to the site Engineer of TSECL.

31 CHECK OUT OF CONTROL SYSTEMS

After completion of wiring, cabling, the contractor shall check out the operation of all control systems for the equipment furnished and installed under these specifications and documents.

32 CABLING

- 32.1 All cables shall be supported by conduits or cable trays run in air or in cable channels. These shall be installed in exposed runs parallel or perpendicular to dominant surface with right angle turn made of symmetrical bends for fittings. When cables are run on cable trays, they shall be clamped at minimum intervals of 2000 mm. or otherwise as directed by the site Engineer.
- 32.2 Each cable, whether power or control, shall be provided with a metallic or plastic tag of an approved type, bearing a cable reference number indicated in the cable and conduit list (prepared by the contractor), at every 5-meter run or part thereof and at both ends of the cable adjacent to the terminations. Cable routing is to be done in such a way that cables are accessible for any maintenance and for easy identification.
- 32.3 Sharp bending and kinking of cables shall be avoided. Installation of cables high voltage, coaxial, screened, compensating, mineral insulated shall be in accordance with the cable manufacturer's recommendations. Wherever cables cross roads and water, oil, sewage or gas lines, special care should be taken for the protection of the cables in designing the cable channels.
- 32.4 In each cable run some extra length shall be kept at a suitable point to enable one or two straight through joints to be made, should the cable develop fault at a later date.
- 32.5 Control cable terminations shall be made in accordance with wiring diagrams, using identifying codes subject to approval of Engineer-in charge of the work. Multi-core control cable jackets shall be removed as required to train and terminate the conductors. The cable jacket shall be left on the cable, as far as



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possible, to the point of the first conductor branch. The insulated conductors from which the jacket is removed shall be neatly twined in bundles and terminated. The bundles shall be firmly but not tightly tied utilizing plastic or nylon ties or specifically treated fungus protected cord made for this purpose. Control cable conductor insulation shall be secure and even.

32.6 The connectors for control cables shall be covered with a transparent insulating sleeve so as to prevent accidental contact with ground or adjacent terminals and shall preferably be terminated at the connecting end of the equipments. The insulating sleeve shall be fire resistant and shall be long enough to over pass the conductor insulation. All control cables shall be fanned out and connection made to terminal blocks and test equipment for proper operation before cables are corded together.

33 AVAILABILITY OF SHUTDOWN.

For Installation & Commissioning of 33 KV sub-transmission line and others work, may require Shut-Down (to be arranged by the Owner) of existing 33 KV / 11KV/LT overhead lines in the proposed route as well as for installation, erection & commissioning of the total project. Such shut down will be provided by the Owner as per Owner's convenience on receiving written requisition informing about his programme from the contractor at least **one week** before such requirement. The Contractor shall have to arrange during execution everything necessary for complete installation & Commissioning of all equipment and the entire requirement as specified in the work schedule.

34..0 Engagement of Technical Representative/Supervisor(mandatory):

Electrical installation work, including additions, alternations, repair etc. shall be carried out under direct supervision of a technical representative holding a certificate of competency of appropriate class. In the event of failure by the contractor for engagement of Technical Representative having certificate of competency to supervise the work, recovery shall be made from the contractor as per table below.

SI No	Value of Contract	Requirement of Technical Representative/Supervisor	Rate at which recovery shall be made from contractor in the event of not fulfilling the provision
1	Up to 25 Lacs	Supervisor of appropriate class	Rs. 5000.00 per month
2	Above 25Lacs up to 250 Lacs	Diploma/Degree Engineer having certificate of competency to supervise the particular work	Rs. 15000.00 per month
3	Above 250 Lacs	Degree Engineer having certificate of competency to supervise the particular work	Rs. 25000.00 per month



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SECTION 7 PAYMENT TERMS

The payment shall be made on item wise basis only as indicated in Price Schedule i.e. the Contractor is eligible for payment in respect of item of work. The purchase document or way bill of supply material to be produced when calming 60% supply amount.

The payment to the Contractor under the contract will be made by the Owner in line with Section -3GCC, and as per the guide lines and conditions specified here under.

All progressive payments shall be released on certification of validity of Bank Guarantees against Contract Performance Guarantees.

The detailed payments conditions are allocated asunder:

7.1 The payment for materials to be procured and duly erected. Regular payment to be made against R.A Bill will be submitted only after completion of all the specified activities complete for each occasion &the work for the next stage is kept continued. **The minimum value for R.A. bills should not be less than the Agreement value divided by time of completion (Month).** The terms of payments for various activities under the contract are as under.

7.2 Price of Supply and Erection

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

A) Supply of Equipment / materials excepting Spares, Tools & Plant.

i) 60%of the cost of **Equipment / materials** after:

a. Acknowledgement of Letter of Award.

b. Submission of contract performance guarantee in the shape of demand draft in favour of Tripura State Electricity Corporation Limited payable at SBI, TLA House Branch, Agartala, West Tripura.

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. Submission of the LR Cop[y and invoice of supply materials.

f. On production of dispatch documents including the material inspection clearance certificate (MICC) issued by the inspecting officer /team of TSECL.

g. Finally, **after receipt of materials at site.**

ii) Balance **30%**of the cost of **Cable /equipment / materials** after erection & 10% after successful commissioning at site.

B) For the Erection Component



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- a. (i) 90% after successful erection of **Cable/ equipments / materials** as per lay-out drawing/Erection Schedule submitted by the bidder and approved by TSECL.
- (ii) 10% after commissioning of equipment etc.
- b. For the Spares & Tools & Plant
 - i. 100% on receipt of the **Spares and T & Plants** in full and good condition.

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

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SECTION 8: SCOPE OF WORK

9.1 Supply, Erection, Testing, commissioning for Underground Cabling & Overhead of Electrical Network

The objective of the scheme is to “Extension of H.T/L.T XLPE U.G Cable line including construction of a 200 KVA Distribution Sub-Station for providing of a service connection to the newly constructed Composite Building for accommodation of different office of PWD at Capital Complex, Khejurbagan, Agartala under ESD- Capital Complex.(Demand Load-138.104). (RCC Base Transformer Sub-Station to be Construction by PWD Department as per rule of TSECL)” to provide reliable and quality power supply.

Scope of work covered under this package includes design, engineering, manufacture, testing, supply, transportation to site, storage, insurance, handling, Laying, testing & commissioning of as stated in above including supply of petty materials. The scope of work includes supply, erection, testing & commissioning of HT, LT XLPE Power Cable, Termination Kits, HDPE Pipes, GI Pipes as specified in schedule of work (BOQ) etc. as guided by schedule of work (BOQ) as per engineering requirement for total completion of the work under Capital Complex Electrical Division, 79 Tilla, Agartala. Scope of work given above is only indicative. The detailed scope has been described in the **Schedule of Work (BOQ)** attached with this bidding document.

- i) The successful bidder shall have to carry out a detailed site survey covering the existing Distribution Sub-Station along with overhead Transmission/sub-transmission & distribution line, submission of route alignment, Survey with profile in details indicating road crossing, river, water body, Sewerage pipe line, Water supply pipe line, Gas pipe line and P&T line etc. and Submission of construction drawing of the Existing Electrical System and obtain NOC from various stakeholders. In case bidder assesses any change in cable route which is unavoidable, he shall write to the Department detailing therein the reasons for the proposed changes. TSECL after assessing the proposal shall either



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approve or reject the same.

- ii) Contractor shall prepare feeder-wise single line diagram of existing as well as proposed assets being created under the proposed scheme. SLD as well as feeder-wise and consumer wise details of materials consumed shall be prepared by turnkey contractor while seeking payment against executed work. This SLD shall be used by 3-tier Quality Assurance Mechanism inspectors as a reference documents to commence in section at site.
- iii) The contractor shall submit the work plan to TSECL and to other utilities like PWD, AMC, DWS, and BSNL as the case may be.
- iv) The bidder shall submit GTP and Drawings of equipment/material to the department for taking prior approval for manufacturing and procurement of the materials.
- v) Conduct pre-dispatch inspection and arrange MDCC from the Owner for further delivery of materials to site stores.
- vi) Maintaining site stores, maintaining round the clock security of stores, materials record keeping, materials handling in stores and up to working site location.
- vii) The contractor shall commence execution work at site after receiving due approvals from TSECL.
- viii) Excavation of trenches, laying HV, MV & LV cable in accordance to technical specification including provision of dry sand layer inside Pre-fabricated duct, cable tray orientation to protect cable from damages and ease of O & M, erection of straight through joints.
- ix) The dismantling of existing overhead network is a separate work and does not come under scope of the contractor under this scheme of undergrounding work.
- x) Erection of Ring Main Unit, Erection of Distribution Substation, Packaged substation, Feeder Pillars, UG service cable.
- xi) Erection, testing and commissioning of Street Lighting equipment/material including successfully putting them into satisfactory operation
- xii) During execution need for replacement of existing poles may arise. The contractor shall inform TSECL in writing regarding replacement of the same.
- xiii) All civil and structural works including structure foundation earthing, pipes, masonry chamber, trenches etc., as required.
- xiv) Erection, testing and commissioning of all the equipment/material including successfully putting them into satisfactory operation.
- xv) Providing engineering data, drawings and O&M manuals for review, approval & records of the Owner.
- xvi) In addition to the requirements indicated in the section "Technical Specifications" all the requirements as stated in other sections shall also be considered as a part of this specification as if completely bound herewith.
- xvii) The contractor shall be responsible for providing all material, equipment and services specified or which are otherwise required to fulfill the intent of ensuring operation ability, maintainability and the reliability of the complete work covered under this package.
- xviii) All services & activities required to be given contractually by the bidder during Defect Liability period.



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9.2 OPERATION & MAINTENANCE

Operation and maintenance of electrical services shall start after successful trial run/testing of entire UG Distribution network. The entire UG Distribution network will be operated & maintained for a period of six months i.e. during the defect liability period free of cost, contractor has to bid accordingly. This defect liability period shall start after the commissioning of entire project. Any fault in electrical system will be promptly attended and for any casualty/mortality of plants and equipment, will also be replaced. Failure of contractor to attend any such occurrences within specified period of intimation will attract penalty. Besides, routine & special maintenance of all electrical equipment such as Distribution Substations, Ring Main Units etc. will be carried by the contractor with in the price quoted.

All personnel like Electricians, Qualified Cable jointer, operators etc. required for maintenance will be employed by contractor. Maintenance will also include all material & consumables required for special & periodic maintenance & day to day operation.

9.3 Responsibility of the Contractor:

In the event of accident to any person including employees of department on duty damages to property, injury to cattle or other animals or damage/ injury of any description to any person or things arising out of the execution of the works the Contractor shall be held responsible for and make good the same and shall indemnify the department from all claims or expenses on account thereof and if the department has to pay any money in respect thereof sum so paid and the costs incurred by the Department shall be charged to the Contractor as so much money paid to him on account of his contract and the Contractor shall not be at liberty to dispute or question the right of the Department to make such payment for him or on his account notwithstanding the same may have been made without his consent or authority and decision or determination in law or otherwise to the contrary notwithstanding.

The contractor has to set up site office with facility of e-mail and telephone connection so that the physical complaint as well as the complaint lodges at respective ESDs, can be intimated to the O&M Team without any delay. Immediately after attending the complaint, O&M team shall communicate Department via e-mail regarding elimination of faults & restoration of line with reference to the complaint nos. so that the monitoring of in time response to the fault or violation, can be monitored by the department.

NOTE: At least One of the skilled staff employed should possess 1st class competence certificate issued by the Electrical Inspector.

9.4 Safety Precautions

Adequate safety precautions against fire, flooding lightening, electrical shocks accident due to moving / non-moving heavy equipment shall be strictly observed by the Contractor at his own cost. Suitable safety measures like boots, gloves, insulated tools, alarms etc. shall be provided by the Contractor except those provided by the department. Necessary medical first aid kit shall be made available all the time. In absence of observations of above safety precautions, the Contractor shall be responsible for any unforeseen loss of the equipment or persons dealing with it.



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In case the Distribution Transformer inside the PSS or any other component like breakers, meters etc. is burnt or damaged due to negligence of the Contractor or due to faulty operation it shall be sole responsibility of the Contractor to get it rewound/ replaced/ repaired, as per standards of the equipment/component, free of cost.

SECTION 9 TECHNICAL SPECIFICATION

This section covers the standard technical requirements of design, manufacturing, testing at works, and transportation to site, insurance, storage, erection and commissioning of all materials to complete the entire project - Extension of H.T/L.T XLPE U.G Cable line including construction of a 200 KVA Distribution Sub-Station for providing of a service connection to the newly constructed Composite Building for accommodation of different office of PWD at Capital Complex, Khejurbagan, Agartala under ESD- Capital Complex.(Demand Load-138.104). (RCC Base Transformer Sub-Station to be Construction by PWD Department as per rule of TSECL).

A. TECHNICAL SPECIFICATION FOR 11KV XLPE HT POWER CABLE:

11KV(E) XLPE HT POWER CABLE:

1.0 SCOPE:

This Section of the Specification covers design, manufacturing, testing, packing, supply & delivery, transportation at site, insurance and laying of 3Core, 11 kV, XLPE, FRLS, Dry gas cured insulated power cable for effectively earthed primary distribution system.

2.0 STANDARDS:

- 2.1 Unless otherwise specified, the cable shall conform in all respect to IS: 7098 (Part-II)-1985 with latest amendment thereof.

3.0 CLIMATIC CONDITIONS:

Moderately hot and humid tropical climate, conducive to rust and fungus growth.

4.0 PRINCIPAL PARAMETERS:

- 4.1 11 KV (E) Grade XLPE, 3-Core, power cable shall be of high conductivity, stranded compacted, H.D. aluminum circular shaped conductor with XLPE (cross linked Poly Ethylene) Dry/Gas cured insulation provided with shielding of extruded semi-conducting materials over conductor and XLPE insulation. Each insulated core shall have copper tape screen, laid together and provided with common covering of PVC Inner Sheath (Extruded). Overall galvanized steel strip armour and PVC outer sheath shall be



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provided. The specification for manufacture of cable shall be conforming to IS: 7098 (Part-II) 1985 (latest edition) for 11KV (E), 3-phase, 50 Hz. Earthed systems. Word “**FRLS**” shall also be embossed on it at every **5 (Five) meter** distance.

FRLS properties – All cable shall be Flame Retardant, Low Smoke (FRLS) type. Outer sheath shall have the following properties -

Oxygen Index – Min 29	(As per ASTM D 2863)
Acid Gas Generation	Max 20% (as per IEC 7541)
Smoke Density Rating	60% (as per ASTM D 2843)
Flammability Test –	As per Swedish chimney test F3 (as per SEN 4241475)
	As per IEC 332 Part-3 (Category-B)

Minimum bending radius shall be 15 D

Repaired cables shall not be acceptable

4.2 Outer sheath shall be designed to afford high degree of mechanical protection and shall also be heat, oil, chemical and weather resistant, Common acid, alkalis and sealing solution shall not have adverse effect on material of PVC sheath.

4.3 Cable shall be suitable for laying in covered trenches and / or buried under-ground in outdoor.

4.4 Cable Parameters :

(i) Voltage grade (U _o / U) kV	: 6.35 / 11
(ii) Cores (Nos)	: 3
(iii) Nominal system voltage kV	: 11
(iv) Highest system voltage kV	: 12
(v) System frequency Hz	: 50
(vi) Variation in frequency %	: ± 3
(vii) (a) Maximum allowable temp. of conductor during continuous normal	



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operation at rated full load current. °C	: 90
(b) Maximum allowable temp. under short circuit condition °C	:250
(viii) 1.2/50 microsecond lightning impulse withstand voltage wave value. kVp	: 75
(ix) 5 Min, Power frequency withstand voltage kV rms	: 17
(x) System earthing	: Effectively earthed.

5.0 GENERAL TECHNICAL REQUIREMENTS:

- 5.1 **Conductor:** The cable conductor shall be made from high conductivity stranded High Density aluminum to form compacted circular shaped conductor having resistance within limits specified in IS: 8130/1984 and any latest amendment to it.
- 5.2 **Conductor shield:** The conductor having semi-conducting screen shall ensure perfectly smooth profile & avoid concentration of stress. The conductor screen shall be extruded in the same operation as the insulation. The semi-conducting polymer shall be cross linked.
- 5.3 **Insulation:** The XLPE insulation shall be suitable for 11 kV system voltage and should be manufactured with Dry / Gas curing process. The bidder shall submit the description of dry / gas curing process, with the clear inclusion of equipments / parameters involved. The manufacturing process shall ensure that the insulation shall be free of voids. The insulation shall withstand mechanical and thermal stress under steady state and transient operating conditions. The extrusion method should give very smooth interface between semi-conducting screen and insulation. The insulation of the cable shall be of high standard quality generally conforming to IS: 7098 (Part – II) – 1985 and any latest amendment to it.
- 5.4 **Insulation shield:** Non-metallic semi-conducting shield shall be provided over the insulation to confine electrical field to the insulation. The insulation shield shall be extruded in the same operation as the conductor shield and the insulation by suitable extrusion process. The XLPE insulation shield shall be of tanded type. The copper metallic overlapped tape shield shall be provided.
- 5.5 **Filler and Inner-Sheath:** The sheath shall be suitable to withstand the site conditions and the desired temperature. It shall be of adequate thickness, consistent quality and free from all defects. The PVC sheath shall be extruded. The material of fillers and inner-sheath shall be compatible with the



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temperature ratings of the cable and shall have no deteriorious effect on any other component of the cable. Central PVC filler shall also, be provided with other peripheral PVC fillers to have proper circular section.

5.6 **Armour:** Armouring of galvanized steel strip shall be provided. The dimensions of steel strips shall be as per latest edition of IS: 3975 – 1979.

5.7 **Outer-Sheath:** Extruded type ST-2 PVC outer-sheath, conforming to IS: 5831- (1984) (latest edition) over armouring with suitable additives (to prevent attack by redents & termites), shall be provided.

5.8 Construction:

5.8.1 The cable shall have suitable PVC fillers laid up with insulation cores to have subsequently circular cross-section before the inner sheath is applied. The fillers shall be suitable for operating temperature of the cable.

5.8.2 All materials used in manufacturing of cable shall be new, unused and of finest quality. All materials should comply with the requirements / tests as per applicable IS / IEC specification, Indian Electricity Rules and any other statutory provision of rules & regulations.

5.8.3 The PVC material used in the manufacture of cable shall be of reputed manufacturer. No recycling of PVC is permitted. The Owner reserves the right to ask for documentary evidence of the purchase of various materials, (to be used for the manufacture of cable) as per checking of quality control.

5.9 Current Ratings:

5.9.1 The value of Normal current carrying capacities of the various sizes of the cables are given below:

Sl. No	Size of 3 Core Cable (Sq.mm)	Current Carrying Capacity in Amp		
		In Ground	In Duct	In Air
1	50	130	115	150
2	70	160	140	190
3	95	190	165	230



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4	120	220	190	260
5	150	245	210	295
6	185	275	240	335
7	240	315	275	395
8	300	355	310	450

5.9.2 Short circuit ratings of various sizes of 3 core cable calculated for duration of 1(one) second are given below:

Sl. No	Size of 3 Core Cable (Sq.mm)	Conductor short circuit rating in kA (rms)
1	50	4.70
2	70	6.58
3	95	8.93
4	120	11.28
5	150	14.10
6	185	17.39
7	240	22.56
8	300	28.20

5.9.3 The current rating shall be based on maximum permissible temperature of 90 degree C for XLPE insulation with ambient site condition specified for continuous operation at the rated current.

5.10 Operation :

5.10.1 Cable shall be suitable for operation under frequency variation of +3% and voltage variation of +10% to -15% and combined frequency - voltage variation of 10% (absolute sum).



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5.10.2 Cable shall be suitable for laying in duct or buried underground.

5.10.3 Cable shall have heat & moisture resistance properties. These shall be of type & design with proven record on distribution network service.

5.10.4 Length: The cable shall be supplied in standard drum length of 500 mtrs. 5% tolerance for all the sizes of cable except for 3 C x 240 mm² and 3 C x 300 mm² size cable. The drum length for 3 C x 240 mm² and 3C x 300 mm² cable shall be 250 mtrs. Over all tolerance in total quantity of ordered cables shall be + 2%.

5.10.5 Identification Mark :

(i) The cable drum shall be printed with information as per cl. 21; 2 of IS and ISI Certification mark. Bidder shall submit xerox copy of valid ISI Licenses with technical bid.

(ii) For identification of cores, colored strip of Red, Yellow and Blue colors shall be used for identification of phases.

Following details of identification shall be embossed at intervals of length of one meter of cable outer sheath.

(iii) (a) Name of manufacturer (b) year of manufacture (c) voltage grade (d) Name of Owner "TSECL".

6.0 TESTS:

6.1(A) Type Tests:

All the cable sizes i.e. items offered should have been fully type tested as per the relevant standards at any Govt. recognized Laboratory. The bidder shall furnish three sets of type test reports along with the offer. The Type test reports shall not be older than FIVE years and shall be valid upto the expiry of validity of offer.

For any change in design/type, already type tested and the design / type offered against this specification, the Owner reserves the right to demand repetition of type tests without any extra cost.

The Owner also reserves the right to have tests carried out at his own cost by an independent agency, whenever there is a dispute regarding the quality of supply.

6.1(B) The following type test reports shall be furnished with the offer:



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- (a) Tests on conductor :
 - (i) Tensile test:
 - (ii) Resistance test:
- (b) Tests for armouring strips / wires. :
- (c) Tests for thickness of insulation and sheath. :
- (d) Physical tests for insulation. :
 - (i) Tensile strength and elongation at break:
 - (ii) Ageing in air oven:
 - (iii) Hot set:
 - (iv) Shrinkage test:
 - (v) Water absorption:
- (e) Physical tests on outer seath :
 - (i) Tensile strength and elongation at break:
 - (ii) Ageing in air oven:
 - (iii) Shrinkage test:
 - (iv) Hot deformation:
 - (v) Bleeding and blooming test:
- (f) Partial discharge test:
- (g) Bending test:
- (h) Dielectric power factor test:
 - i) as a function of voltage:
 - ii) as a function of temperature:
- (i) Insulation resistance test (volume resistivity):
- (j) Heating cycle test:
- (k) Impulse withstand test:
- (l) High voltage test:



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(m) Flammability test:

6.2 Acceptance Test:

6.2.1 The selection of sample pieces for acceptance test shall be from 10% drums of each lot offered for inspection or part thereof. The minimum shall be one drum.

6.2.2 The following acceptance tests shall be carried out on the selected samples as per IS: 7098 (Part-II) – 1985.

(a) Annealing test (for copper)

(b) Tensile test (for aluminum)

(c) Wrapping test (for aluminum)

(d) Conductor resistance test.

(e) Test for thickness of insulation and sheath

(f) Hot set test for insulation

(g) Tensile strength and elongation at break test for insulation and sheath.

(h) Partial discharge test (for screened cables only)

(i) High voltage test for 4 hours (as per cl. No. 19.7.1)

(j) Insulation resistance (volume resistivity) test.

6.2.3 All the acceptance tests shall be carried out by the contractor, in the presence of Owner's representative at their works. The contractor shall give at least 15 days' advance notice to the Owner to enable him to depute the engineer for witnessing the tests. The test certificates for acceptance tests witnessed by inspecting officer/ engineer shall be submitted for approval before dispatch of material.

6.3 Tests:

6.3.1 The bidder shall have to submit, well in advance, the test certificates for the following routine test for approval prior to inspection of the materials for the complete lot offered for inspection at a time.

(a) Conductor resistance test

(b) Partial discharge test

(c) High-voltage test for 5 minutes [as per Clause 19.7.2 of IS: 7098 (Part-II) –1985].



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7.0 INSPECTION:

Inspection shall be guided as per **Clause No. 27.0 , Section -III**

8.0 DOCUMENTATION:

8.1 The bidder shall furnish following documents along with his offer.

8.1.1 Sectional view, showing the General constructional feature with conductor / conductor screen / insulation / armouring / inner and outer sheath etc.

8.1.2 Drawing of cable drums with details of material dimension and paint etc shall be submitted.

8.1.3 All the required type test reports for offered items tested at any Government recognized Laboratory.

8.1.4 Literature, pamphlets for the record items.

9.0 PACKING AND FORWARDING:

9.1 The cable shall be wound on wooden drums as per IS: 10418 – 1972 and packed in drums suitable for vertical / horizontal transport, as the case may be and shall be suitable to withstand rough handling during transport and outer storage. The outer surface of the drum shall be painted with white aluminum pint. Similarly, the inside surface of drum shall have the protective layer of varnish / paint to protect it from white ants.

9.2 The wooden drums shall be reinforced with steel bends and strips for better protection.

9.3 The ends of the cable shall be sealed by means of non-hygroscopic sealing materials.

9.4 The following information may be stenciled on the drum with either water proof ink or oil paint:

i. Reference of IS / IEC standard.

ii. Manufacturer's name or trademark.

iii. Type of cable and voltage grade.

iv. No. of cores.

v. Nominal cross-sectional area of conductor.

vi. Cable code.

vii. Length of cable on the drum



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- viii. No. of lengths on the drum (if more than one)
- ix. Direction of rotation of drum (by means of an arrow)
- x. Position of outer end of cable
- xi. Gross weight
- xii. Country of manufacture
- xiii. Year of manufacture
- xiv. Reference of A/T No. & date
- xv. Property of TSECL
- xvi. Name of consignee and the destination.

The drum may also be marked with ISI Certification Mark. Over and above, name plate of aluminum of suitable size and thickness, containing all the above information, shall be fixed on the drum in addition to the painting.

9.5 The contractor shall be responsible for any damage to the cables during transit due to improper and inadequate packing. Wherever necessary, proper arrangement for lifting, such as lifting hooks, shall be provided. Any cable found short inside the packing cases shall be supplied by the contractor, without any extra cost.

9.6 Each consignment shall be accompanied by a detailed packing list, containing the following information:

- (a) Name of consignee
- (b) Details of consignment
- (c) Destination
- (d) Total weight of consignment
- (e) Handling and unpacking instruction
- (f) Bill of materials, indicating contents of each package.

B. HEAT SHRINKABLE TYPE END TERMINATIONS & STRAIGHT THROUGH FOR XLPE CABLES

(I) HEAT SHRINKABLE TYPE END TERMINATIONS KITS:

1.0 SCOPE:



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This section covers the standard technical requirements of design, manufacturing, testing at works, and transportation to site, insurance, storage, erection and commissioning of heat shrinkable type terminations suitable for 11 KV, 3-core, XLPE insulated, screened, armored, with aluminium conductor cables suitable for earthed system and conforming to IS:7098 (Part-II)-1985 with latest amendment or the equivalent International Standards.

2.0 STANDARD:

The performance as well as type test requirements of all type of kits referred under scope shall conform to stipulations of IS:13573/1992 or the equivalent International Standards with latest amendments. All the electrical & physical parameters of terminations should also conform to the corresponding parameters of XLPE cables referred under 'SCOPE' of this specification, as per IS: 7098 (Part-II)-1985 (with latest amendments, if any) or equivalent international standards

3.0 CLIMATIC CONDITIONS:

- a. Maximum ambient temperature in open air(°C) : 50
- b. Maximum ambient temperature in shade (°C) : 45
- c. Minimum temperature in shade(°C) : 3
- d. Relative humidity (%) : 10 to 100
- e. Maximum annual rainfall (mm) : 1450
- f. Maximum wind pressure (Kg/ Sqmtr.) : 150
- g. Maximum altitude above mean sea level (Mtrs) : 1000
- h. Isoceraunic level (days/year) : 50
- i. Seismic level (Horizontal acceleration) : 0.3 g.
- j. General nature of climate : Moderately hot and humid tropical climate, conducive to rust and fungus growth.

4.0 REQUIREMENT:

The heat shrinkable / push on type terminations offered shall be of proven design and make, which have already been extensively used and fully type tested.

5.0 GENERAL REQUIREMENT:

The purpose of this specification is to specify the performance requirements of termination kits for the use on 50 c/s 3 phase system with earthed neutral for working voltage of 11 kV up to 33kV. Earthing arrangement shall be as per relevant standard and details of earthing arrangement offered shall be submitted along with the inspection offer. The material to be used should be inert and capable of resisting degradation during the service of cable system. The kit shall be provided with protection against rodents and termite attack.

5.1 Heat Shrinkable Type (Terminations) :

The term heat shrinkable refers to extruded or moulded polymeric materials which are cross-linked to develop elastic memory and supplied in expanded or otherwise deformed size / shape, subsequently



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heated in an un-constrained state to a temperature above the shrink temperature resulting in the material recovering or shrinking to its original shape.

- 5.1.1 Since the sealant or adhesives (to be used for environment sealing) between the heat shrinkable materials and XLPE cables shall be exposed to high electrical stresses, they must be track resistant.
- 5.1.2 The heat shrinkable polymer materials being used for external leakage insulation between the high voltage of conductors and grounds should be weather resistant.
- 5.1.3 All cuts/nicks inadvertently occurred to XLPE insulation must be rendered discharge free by using suitable discharge suppression compound.
- 5.1.4 The heat shrinkable tubing may be either extruded or moulded type.
- 5.1.5 Higher thickness of heat shrinkable sleeves shall be preferable to counter erosion due to pollution.

5.2 Other Requirements:

- 5.2.1 Proper stress control, stress grading and non-tracking arrangement in the terminations shall be offered by means of proven methods, details of which shall be elaborated in the bid. Detailed sectional view of assemblies shall be submitted along with the bid.
- 5.2.2 The kits offered shall provide the total environment sealing, the details of which shall be offered along with the bid.
- 5.2.3 Provision for effective screening over each core be made and contractors shall categorically conform this aspect in their bid.
- 5.2.4 The material and components not specifically stated in the specification, but which are essential for satisfactory operation of the equipments shall be included without any extra cost.
- 5.2.5 The terminations shall be of good tracking resistant properties and fully reliable earthing system to maintain continuous contact with screening / armouring as the case may be.
- 5.2.6 The armour earthing arrangement shall form part of the termination.
- 5.2.7 Terminations shall have provision for shield connections and earthing.
- 5.2.8 The kits shall be suitable for storage without deterioration at a temperature up to 50°C for more than 5 years.
- 5.2.9 The fault level (as well as duration) withstand capability of terminations should be strictly matching with these parameters of cables for which the kits are intended to be used.
- 5.2.10 The words 'TSECL' along with trade name of manufacturer, month/year of manufacturer, size etc. shall be embossed/engraved or suitably marked with indelible ink/paint for the purpose of identification.
- 5.2.11 Suitable creepage extension/rain protection sheds for outdoor termination shall be provided.
- 5.2.12 The adequate provisions for eliminating the chances of entrapment of air at the steps formed by semicon screen shall be made.



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- 5.2.13 The gripping tubing (termination boot) for the cable where trifurcation takes place, shall also be part of kit and covered under scope of supply of this specification.
- 5.2.14 Name of sub-supplier for the raw material and standard according to which their raw material is tested, must be furnished along with the bid.
- 5.2.15 Detailed kit contents, whether manufactured by the contractor or bought from outside (with name of sub-Contractor) for each component must be indicated in the bid.
- 5.2.16 The terminations shall be supplied in kit forms. All insulating and sealing materials, consumable items, conductor fittings, earthing arrangements and lugs etc. shall be included in the individual kit.
- 5.2.17 An instruction manual in English indicating the complete method/procedure to be adopted for installation of kits, preferably with more and more diagrams/pictorial presentation shall be supplied with each kit. Various items/ quantity thereof against each kit must be indicated in the instruction manual.

6.0 GUARANTEED TECHNICAL PARTICULARS:

The terminations shall have same electrical and thermal characteristics as those of cables with which these are intended to be used. The bidders must furnish the guaranteed technical particulars for each type/size of kit in clause 11.0.

The terminations shall have same electrical and thermal characteristics as those of cables with which these are intended to be used. The bidders must furnish the guaranteed technical particulars for each type/size of kit in clause 11.0.

7. **DRAWINGS:** Complete detailed dimensional drawings showing all details of kit contents/bill of material for each size type.

8.0 TESTS: -

- 8.1 **Type tests:** The termination kits offered shall be fully type tested as per the standards certified by an accredited laboratory

8.2 Acceptance Tests:

Initially the following tests shall constitute as acceptance tests: -

- i) Dimensional checking as per approved drawings. ii) Volume resistivity test for various components.
- iii) AC High voltage test after installation of terminations (as per IS : 13573/1992 or VDE-0278) on appropriate cable.
- iv) Dielectric strength of major components.
- v) D.C. High voltage test.
- vi) Tracking resistance.
- vii) Ultimate elongation.

The scope to include more type tests as acceptance tests shall be decided after processing the offers of various contractors/after knowing the details of testing facilities for type tests available with various bids



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8.3 ROUTINE TESTS: -The following tests shall constitute routine test:

- i) Dielectric strength.
- ii) Density.
- iii) Heat shock.
- iv) Shrinkage ratio.

The contractor must specify the details of routine tests (being conducted at their works) along with the standard applicable, in their offer. The routine test certificates shall be furnished along with the inspection call for each offered lot.

9.0 INSPECTION:

- 9.1 All test and inspection shall be made at the place of manufacture unless otherwise especially agreed upon by the manufacturer and purchaser at the time of purchase. The manufacturer shall afford the inspector representing the purchaser all reasonable facilities without charge to satisfy him that the material is being furnished in accordance with specification.
- 9.2 The purchaser reserves the right to have the test carried at the cost of the supplier by an independent agency whenever there is dispute regarding the quality of supply.

10.0 PACKING AND TRANSPORT: The supplier shall be responsible for suitable packing of all the kits of material and marking on the consignment, so as to avoid any damage during transport and storage and to ensure correct dispatch to the destination.

11.0 GUARANTEED TECHNICAL PARTICULARS:

(B) HEAT SHRINKABLE TYPE STRAIGHT THROUGH JOINTS:

1.0 Scope:

This section covers the standard technical requirements of design, manufacturing, testing at works, and transportation to site, insurance, storage, erection and commissioning of heat shrinkable type straight through joints suitable for 33 kv, 3-core, XLPE insulated, screened, armoured, with aluminium conductor cables suitable for earthed system.

2.0 Standard:

The performance as well as type test requirements of all type of kits referred under scope shall conform to stipulations of IS:13573/1993 or VDE-0278 with latest amendments, if any. All the electrical & physical parameters of straight through joints should also conform to the corresponding parameters of XLPE cables referred under 'SCOPE' of this specification, as per IS:7098(Part-II)-1985 (with latest amendments, if any).

3.0 Climatic Conditions:

- a. Maximum ambient temperature in open ai(°C) : 50
- b. Maximum ambient temperature in shade (°C) : 45



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- | | |
|---|--|
| c. Minimum temperature in shade(°C) | : 3 |
| d. Relative humidity (%) | : 10 to 100 |
| e. Maximum annual rainfall (mm) | : 1450 |
| f. Maximum wind pressure (Kg/ Sqmtr.) | : 150 |
| g. Maximum altitude above mean sea level (Mtrs) | : 1000 |
| h. Isoceraunic level (days/year) | : 50 |
| i. Seismic level (Horizontal acceleration) | : 0.3 g. |
| j. General nature of climate | : Moderately hot and humid tropical climate,
conducive to rust and fungus growth. |

4.0 Requirement: -

The heat shrinkable straight through joints offered shall be of proven design and make, which have already been extensively used and fully type tested.

5.0 General Requirement: -

The purpose of this specification is to specify the performance requirements of straight through joints for the use on 50 C/S 3 phase system with earthed neutral for working voltage of 33 KV. Earthing arrangement shall be as per relevant standard and details of earthing arrangement offered shall be submitted along with the tender.

- 5.1.0 The material to be used should be inert and capable of resisting degradation during the service of cable system. The kite shall be provided with protection against rodents and termite attack.
- 5.2.0 Heat shrinkable type straight through joints.
- 5.2.1 The term heat shrinkable refers to extruded or moulded polymeric materials which are cross-linked to develop elastic memory and supplied in expanded or otherwise deformed size/shape, subsequently heating in an unconstrained state to a temperature above the shrink temperature resulting in the material recovering or shrinking to its original shape.
- 5.2.2 Since the sealant or adhesives (to be used for environment sealing) between the heat shrinkable materials and XLPE cables shall be exposed to high electrical stresses, they must be track resistant.
- 5.2.3. The heat shrinkable polymer materials being used for external leakage insulation between the high voltage of conductors and grounds should be weather resistant.
- 5.2.4. All cast/nicks inadvertently occurred to XLPE insulation must be rendered discharge free by using suitable discharge suppression compound.
- 5.2.5. The heat shrinkable tubing may be either extruded or moulded type.



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5.2.6. Armour earthing shall be by means of tinned copper earth braid affixed to the armour with jubilee clips. Binding wire connections are not acceptable. Support ring of the armour should be self-locking type so that no pressure of tightening can come on the cable within it.

5.2.7. Insulation over the ferrule area shall be in one or more layers. In case co-extruded tubing is offered, the same should be provided both for the inner tubing of Stress-control inside and insulation outside, as well as for the outer tubing of insulation inside and conductive outside. Details of test method for acceptance testing of properties of each layer whether co-extruded or not should be clearly brought out in the offer.

5.2.8. Recovered insulation thickness over the ferrule shall be not less than that of the original cable.

5.2.9. Mechanical protection of the joint shall be by means of a rigid armour case, and not a flexible one.

5.3.0 Other Requirements:

5.3.1. Proper stress control, stress grading and non-tracking arrangement in the terminations shall be offered by means of proven methods, details of which shall be elaborated in the offer. Detailed sectional view of assemblies shall be submitted along with the offer.

5.3.2. The kits offered shall provide the total environment sealing, the details of which shall be offered along with the offer.

5.3.3. Provision for effective screening over each core be made and bidders shall categorically conform this aspect in their offer.

5.3.4. The material and components not specifically stated in the specification, but which are essential for satisfactory operation of the equipments shall be included without any extra cost.

5.3.5. The straight through joints shall be better tracking resistant properties and fully reliable earthing system to maintain continuous contact with screening / armouring as the case may be.

5.3.6. The armour earthing arrangement shall form part of the straight through joints.

5.3.7. Straight through joints shall have provision for shield connections and earthing.

5.3.8. The kit shall be suitable for storage without deterioration at as temperature upto 500 C for more than 5 years.

5.3.9. The fault level (as well as duration) withstand capability of terminations should be strictly matching with these parameters of cables for which the kits are intended to be used.

5.3.10. The words 'TSECL' along with trade name of manufacturer, month/year of manufacturer, size etc. shall be embossed/engraved or suitably marked with indelible ink/paint for the purpose of identification.

5.3.11. The adequate provisions for eliminating the chances of entrapment of air at the steps formed by semicon screen shall be made.

5.3.12. Name of sub-contractor for the raw material and standard according to which their raw material is tested, must be furnished along with the offer.



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5.3.13. Detailed kit contents, whether manufactured by the bidder or bought from outside (with name of sub-Contractor) for each component must be indicated in the offer.

5.3.14. The straight through joints shall be supplied in kit forms. All insulating and sealing materials, consumable items, conductor fittings, earthing arrangements and lugs etc. shall be included in the individual kit.

5.3.15. An instruction manual in English as well as Hindi script, indicating the complete method/procedure to be adopted for installation of kits, preferably with more and more diagrams / pictorial presentation shall be supplied with each kit. Various items quantity thereof against each kit must be indicated in the instruction manual.

6.0 Drawings: -

Complete detailed dimensional drawings showing all details of kit contents / bill of material for each size type.

Note: Any tender without complete guaranteed technical particulars and dimensional drawings shall be liable for rejection.

7.0 Training: -

In case of placement of an order against this tender enquiry, the tender shall have to impart free of cost demonstration to selected number of TSECL personnel by installing few kits anywhere in Agartala, place of Owner's discretion. If required contractor may have to give free of cost practical training regarding installation of their product in work site also. The training for installation of kits to field staff shall be given by the contractor within two weeks of receipt of first lot of material.

8.0 Tests: -

8.1. Type tests: The straight through joints kits of offered design should have been got tested at CPRI or some other recognized test house of equal repute as per IS: 13573/1992 or VDE-0278 read with latest amendments/ revision. The type test certificates, in duplicate, for any size of straight through joints of offered design / material issue by CPRI, Bangalore or any other recognized test house of equal repute conforming to IS: 13573/1992 or VDE-0278 (with latest amendments/revisions) must be annexure with the offer. The offer without type test certificates are liable to be ignored.

8.2.0 Acceptance Tests:

8.2.1. Initially the following tests shall constitute as acceptance tests: -

8.2.1.1. Dimensional checking as per approved drawings.

8.2.1.2. Volume resistivity test for various components.

8.2.1.3. AC High voltage test after installation of terminations (as per IS: 13573/1992 or VDE0278) on appropriate cable.

8.2.1.4. Dielectric strength of major components.

8.2.1.5. D.C. High Voltage test.



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8.2.1.6. Tracking resistance

8.2.1.7. Tensile strength

8.2.1.8. Ultimate Elongation.

8.2.2. The scope to include more type tests as acceptance tests shall be decided after processing the offers of various bidders/after knowing the details of testing facilities for type test available with various tenders.

Important: The tenderers must specifically mention in their offer about the details of testing facilities for various type tests as per IS:13573/1992 and or VDE-0278, available at their works, failing to do so, the offer is liable to be rejected on the presumption that adequate testing facilities are not available with them.

8.3.0 Routine Tests: The following tests shall constitute routine test.

8.3.1. Dielectric strength

8.3.2. Density

8.3.3. Heat shock

8.3.4. Shrinkage ratio

The tenderer must specify the details of routine tests (being conducted at their works) along with the standard applicable, in their offer. The routine test certificates shall be furnished along with the inspection call for each offered lot.

9.0 Inspection:

The material shall be made, inspected and tested in the presence of the authorized representative of the Corporation. at the manufacturer's / contractors works at the cost of the contractors. In case the contractor is not position to get these tests carried out at his works, then the material should be got tested in the presence of authorized inspecting officer of TSECL from any other testing agency or his from the Govt. recognized testing agency. All the expenses incurred to this effect shall be borne by the contractor. The owner or his authorized representative shall have access at all reasonable times to the manufacturer's works to inspect and witness the tests. The owner has the right to have the test carried out at the cost of the contractor by an independent agency wherever there is dispute regarding the quality of the material supplied.

10.0 Packing and transport:

The contractor shall be responsible for suitable packing of all the kits of material and marking on the consignment, so as to avoid any damage during transport and storage and to ensure correct dispatch to the destination.

11.0 GUARANTEED TECHNICAL PARTICULARS:



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D. EARTHING AND EARTHING G.I PIPE (40mm Dia):

1.0 Scope

GI earthing pipe should be made of 40 mm diameter ISI marked C-class GI Pipe. 12 mm dia suitable holes on its circumference shall be made as per approved drawing. The pipe should be in one piece. No joints or welding would be allowed on its length. Clamps made of 50x6mm GI flat duly drilled with 12 mm size holes should be welded at the top end for connection of earth conductor. Pipe used shall be 40mm NB diameter, ISI marked Galvanized Mild Steel Tubes continuously welded Electric Resistance Welded ERW/High Frequency Induction welded (HFIW)/Hot finished welded (HFW) type, conforming to IS-554-1985 with latest amendment of Heavy-duty quality (Class C).

2.0 MANUFACTURE

GI earth pipe (40 mm diameter & 2.5-meter-long) shall be made of tubes which shall be made from tested quality steel manufactured by any approved process as follows:

- a) Electric Resistance Welded (ERW).
- b) High Frequency Induction Welded (HFIW) and
- c) Hot finished Welded (HFW).

Tubes made by manual welding are not acceptable.

3.0 DIMENSIONS

The dimensions and weights of tubes shall be in accordance with Table-I and Table-II of IS: 1239 (Part-I)/1990 with latest amendments, subject to tolerance permitted therein. Necessary 12 mm diameter holes across the circumference shall be provided as per approved drawing. Drawings shall be approved by the owner before start of the manufacturing work. The tube, earthing pipe shall be provided with 50x6mm GS clamps on one end, one clamp is to be welded with the pipe and another is removable to enable measurement of earth resistance of the pit. Other end of the earth pipe should be cut half in slop to make it a sharp.

4.0 GALVANIZING

Tubes shall be galvanized in accordance with IS-4736-1986 with latest amendment for not dip zinc coating of Mild Steel Tubes. The minimum mass of zinc coating on the tubes shall be in accordance with clause 5.1 of IS-4736-1986 (specification for hot dip zinc) and when determined on a 100mm long test piece in accordance with IS: 6745:1972 shall be 400 g/m². The zinc coating shall be uniform adherent reasonably smooth and free from such imperfections as flux, ash and dross inclusions, bare patches, black spots, pimples, lumpiness, rust, stains, bulky white deposits and blisters.

5.0 HYDRAULIC TEST

(Before applying holes) Each tube shall withstand a test pressure of 5 M Pa maintained for at least 3 seconds without showing defects of any kind. The pressure shall be applied by approved means and



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maintained sufficiently long for proof and inspection. The testing apparatus shall be fitted with an accurate pressure indicator.

6.0 TESTS ON FINISHED TUBES AND SOCKETS

The following tests shall be conducted by the manufacturer of finished tubes and sockets.

- i. The tensile strength of length of strip cut from selected tubes when tested in accordance with IS-1894-1972, (Method for tensile testing of steel tubes), shall be at least 320N/mm².
- ii. The elongation percentage on a gauge length of 5.65/so (where so is the original cross-sectional area of test specimen) shall not be less than 20%.
- iii. When tested in accordance with IS-2329-1985 (Method for Bend test on Metallic tubes) the finished tube shall be capable of withstanding the bend test without showing any sign of fracture or failure. Welded tubes shall be bent with the weld at 90 degree to the plane of bending. The tubes shall not be filled for this test.
- iv. Galvanized tubes shall be capable of being bent cold without cracking of the steel, through 90 degree round a former having a radius at the bottom of the groove equal to 8 times the outside diameter of tube.
- v. Flattening Test on Tubes above 50 mm Nominal Bore: Rings not less than 40 mm in length cut from the ends of selected tubes shall be flattered between parallel plates with the weld, if any, at 90 degree (point of maximum bending) in accordance with IS-23281983. No opening should occur by fracture in the weld unless the distance between the plate is less than 75 percent of the original outside diameter of the pipe and no cracks or breaks in the metal elsewhere than in the weld shall occur, unless the distance between the plates is less than 60% of the original outside diameter. The test rings may have the inner and outer edges rounded.

7.0 GALVANIZING TEST

- i. Weight of zinc Coating: For tubes thickness upto 6 mm the minimum weight of zinc coating, when determined on a 100 mm long test piece in accordance with IS-4736-1986 shall be 400 gm/m².
- ii. The weight of the coating expressed in gram/m² shall be calculated by dividing the total weight of the zinc (inside plus outside) by the total area (inside plus outside) of the coated surface.
- iii. Test specimen for this test shall be cut approximately 100 mm in length from opposite ends of the length of tubes selected for testing. Before cutting the test specimen, 50 mm from both ends of the samples shall be discarded.
- iv. Free Bore Test: A rod 230mm long and of appropriate diameter shall be passed through relevant nominal bore of the sample tubes to ensure a free bore.
- v. Uniformity of Galvanized Coating: The galvanized coating when determined on a 100 mm long test piece [see V (a) (iii)] in accordance with IS-2633-1986 (Method for testing uniformity of coating on zinc coated articles) shall with stand 4 one-minute dips.



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8.0 WORKMANSHIP

The tubes shall be cleanly finished and reasonably free from injurious defects.

They shall be reasonably straight, free from cracks, surface flaws, laminations, and other defects, both internally and externally. The screw tubes and sockets shall be clean and well-cut.

The ends shall be cut cleanly and square with the axis of tube.

9.0 MARKING

i. The medium class of tubes shall be distinguished by Blue colour bands which shall be applied before the tubes leaves the manufacturers' works.

ii. Tubes shall be marked with the standard mark.

10.0 EARTHING ARRANGEMENT OF DISTRIBUTION TRANSFORMERS

10.1 The earth pits should be located as per REC Construction Standard F-5 (Annexure VI).

10.2 Pipe earth electrodes should be provided in each earth pit as per REC construction standard J-1 and J-2 (Annexure VII & VIII).

10.3 4 mm (8 S.W.G), G.I. wire should be used for earth leads.

10.4 One of the earth electrodes on either side of D.P. structure should be connected with;

(a) On direct connection from the L.T. Lightning arresters and cross-arm.

(b) One direct connection with Lightning arrester on H.T. side (11KV) and cross-arm.

10.5 To each of the remaining two earth electrodes, the following should be connected: -

(a) One separate connection from the neutral (on medium voltage side) of the transformer.

(b) One separate connection from the transformer body and the handle of 11KV A.B. switch.

(c) One separate connection from the earthing terminal of the poles.

C. HEXAGONAL MS BOLTS & NUTS

1.0 SCOPE:

This specification covers the details of black hexagonal MS Bolts & Nuts of various sizes.

2.0 APPLICABLE STANDARDS:

Unless otherwise modified in this specification, the bolts and nuts shall comply with Indian Standard Specifications IS: 1363 -1967 as amended from time to time or equivalent international standards.

3.0 CLIMATIC CONDITIONS:

Suitable of Tripura State Climate conditions.

4.0 WORKMANSHIP:



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Full threaded bolts shall not be used. The bolts and nuts shall have hexagonal heads, which shall be neatly finished concentric and square with the shank and free from burrs, scale and other defects. Threads in nuts shall not be torn or ragged and shall be of proper contour. The fits of the nuts shall be such that there will be no locking of the nuts. Nuts and bolts of the same size shall be interchangeable. The thread of nuts & bolts shall have coarse pitch screw threads as per IS:1363 -1967 or relevant International Standards and shall meet with all applicable technical supply conditions covered under this standard.

5.0 PARTICULARS OF MATERIAL:

5.1 MECHANICAL PROPERTIES:

The mechanical properties of bolts covered in this standard shall conform to the property clause 4.6 and those for nuts shall conform to the property clause 4 specified in IS: 13631967 or its latest edition.

6.0 GRADE:

Bolts & nuts covered in this specification shall conform to Black Grade B, specified in IS: 1363-1967.

7.0 DESIGNATION:

Black Bolts & Nuts covered in this specification shall be designated as per table I of IS : 1363-1967.

8.0 DIMENSIONS:

The dimensions for black bolts & nuts shall be as given in table 2 & 3 of IS : 1363-1967.

The bolts and nuts shall have coarse pitch screw threads conforming to IS : 4218-1967 (ISO Metric screw threads) or the relevant International Standards.

Preferred length diameter combinations for black hexagonal bolts are given in table-4 IS : 1363-1967.

9.0 REQUIREMENTS:

9.1 The method of sampling and acceptance criteria of black hexagonal bolts and nuts shall be in accordance with IS: 2614-1964.

9.2 The bolts & nuts conforming to this standard shall comply with the requirements of IS: 1367-1967 in regard to requirements not specified in this standard.

10.0 TESTS:

All types of tests including routine tests shall be carried out according to relevant standards.

11.0 INSPECTION:

Inspection and testing shall be carried out in accordance with the general instructions.

12.0 PLACE OF MANUFACTURE:

The contractor shall state the place of manufacture, testing and name of the manufacturer of the various items included in his inspection offer.

13.0 PACKING AND TRANSPORT:



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The contractor shall be responsible for suitable packing of all the material and marking on the consignment, so as to avoid any damage during transport and storage and to ensure correct dispatch. The packing shall be conforming to the requirement laid down in IS: 3256-1965 or its latest amendment.

14.0 DRAWING AND LITERATURE:

Illustrated and descriptive literature on the material must be submitted along with the offer for inspection.

15.0 RAW MATERIAL:

No assistance whatsoever for arranging the raw material for manufacture of bolts & nuts shall be provided by the employer. The delivery shall not be dependent upon availability of raw material.

16.0 MARKING:

The sealed container of bolts & nuts shall be marked with:

- a) Manufacturer's name & trade mark.
- b) Place of manufacture.
- c) The marking shall be stencilled indelible ink on gunny bags.
- d) Net weight with description of material.

D. CIVIL WORKS

Civil works covers the followings: -

- i) Construction of foundation bases for electrical equipments with R.C.C. / Cement Concrete work etc. as per approved drawing and design.
- ii) Construction of cable trench wherever necessary for laying of cables for electrical equipments and providing R.C.C. slabs on cable trenches as required.
- iii) Providing grouting of steel tubular poles and yard light support in R.C.C. work 1: 2: 4 (1 Cement: 2 river sand: 4 First class jhama brick aggregate).
- iv) Chain link fencing /painting on Steel tubular pole/Steel works etc., earth excavation wherever necessary and as applicable according to Bidding Schedule as per design of TSECL & specification of PWD.

E. HDPE pipes

1.0 SCOPE:

This section covers design, manufacture, testing before dispatch, packing, transportation at site, insurance, supply & delivery F.O.R destination, and laying of **ISI Marked HDPE pipes**

2.0 SERVICE CONDITIONS:

HDPE to be supplied against this specification shall be suitable for satisfactory continuous operation under the following tropical conditions.

- a. Maximum ambient temperature (deg C) : 50
- b. Maximum temperature in shade (deg C) : 45
- c. Minimum temperature in air (deg C) in shade : 3.5



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- d. Relative Humidity (%) : 10 to 100
- e. Maximum annual Rainfall (mm) : 1450
- f. Maximum Wind Pressure (kg/mm²) : 150
- g. Maximum altitude above mean sea level (Meters) : 1000
- h. Isoceraunic level (days/year) : 50
- i. Seismic level (Horizontal acceleration) : 0.3 g.
- j. Moderately hot and humid tropical climate, conducive to rust and fungus growth.

3.0 STANDARD: -

A. TYPE

(i) The HDPE pipe shall be standard make suitable for laying 3core 300mm square XLPE cable underground.

(ii) The HDPE pipe shall be ISI marked and complying to technical requirement of IS14930.

(a). Size: -

(iii) The HDPE pipe shall have OD/ED (mm) as 180/152 and have standard length of 6 meters.

(b). Fitting and Assembly.

(vi) The scope of work shall include all fittings and accessories namely End Caps, Bends, Tees etc required for the successful execution of laying work of the HDPE pipe.

(c.) Non-flame propagating properties.

(v) The HDPE pipe shall be of non-flame propagating type as per IS-14930 (Part-II).

(d.) Antirodancy

(vi) The HDPE pipe shall have antirodancy property to prevent damage caused due to rodents.

(e). Inspection & Test

(vii) The HDPE pipes shall be offered for inspection at manufactured work before dispatch and test as per relevant IS shall be conducted by the authority representative of purchaser.

4.0 INSPECTION

4.1 All test and inspection shall be made at the place of manufacture unless otherwise especially agreed upon by the manufacturer and purchaser at the time of purchase. The manufacturer shall afford the inspector representing the purchaser all reasonable facilities without charge to satisfy him that the material is being furnished in accordance with specification.

4.2 The purchaser reserves the right to have the test carried at the cost of the supplier by an independent agency whenever there is dispute regarding the quality of supply.

5.0 PACKING & MARKING

5.1 PACKING



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Pipes shall be well finished, clean and free from harmful surface defects.

The Pipes shall be so transported that the pipes are adequately protected against damage in ordinary handling and transit. To avoid damage of the pipes, transshipment in between the road transportation must be avoided i.e. each consignment should be transported from factory to DGM Electrical Division No. II, Agartala through a single carrier.

6.0 MARKING

A. Each pipe shall bear the following permanent marking on a place just at the middle section of the pipe.

- a. Manufacturer's name :
- b. Manufacturer's Trade mark :
- c. Designation of Pole :
- d. Year of manufacture :
- e. Client : TSECL
- f. Project : Deposit Work
- g. ISI certification mark if any :

7.0 Guaranteed technical Particulars

Guaranteed technical parameters of HDPE PIPE

- (i) Name of manufacturer
- (ii) Size of HDPE pipe (O/D)(I/D)mm.
- (iii) Standard length
- (iv) Colour
- (iv) Method of Jointing
- (v) **Material**
 - (a) Whether having non-flame propagating property.
 - (b) Whether having Anto-rodancy feature.
 - (c) Detail of fitting accessories.
 - (d) Detail of past supplies & performance.
 - (e) Type test certification.



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Schedule of Quantity & Prices”

(Schedule-A).

Sl. No.	Description of Items	Qty	Unit	Rate in Fig	Rate in words
A	SUPPLY OF THE FOLLOWINGS				
1	Cable (XLPE 11 KV) 3C X 185 Sq mm	300	Mtr		
2	L.T Grade Armoured Cable 3.5 C X 120 sq mm	170	Mtr		
3	1" dia PVC Pipe	20	Mtr		
4	HDPE PIPE ,PE-100 GRADE, 110 mm outer Dia 6 Mtr Long	32	Mtr		
5	Supply of 2.5 mtr long 40mm dia G.I pipe(Make:- TATA/ JINDAL)	4	No		
6	Supply of 60 Kg Salt & 55 KG Charcoal(For 1 Pit)	4	No		
7	Supply of fabricated clamps of assorted size of MS flat (50 * 6mm) with double coat of red oxide primer coating.	36	No		
8	Indoor type L.T cable kit for XLPE 3C X 120 Sq mm	2	Set		
9	Outdoor type L.T cable kit for XLPE 3C X 120 Sq mm	2	Set		
10	Supply of Cupper Strip (300x50X6mm)	4	Nos		
B	CARRYING OF THE FOLLOWING				



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1	Carriage of 9 Mtr length of pcc Pole by Mechanical transport from the Electrical Sub-Divisional Site Store to Working site Vis-à-vis,including loading,unloading and stacking as required. A) Upto lead range 25 KM i) For maximum 4(four) poles. (Supply by TSECL)	4	No		
2	Carriage of 11/0.430 kv ,3-phase 200 KVA/250 KVA by Mechanical Transport from Site to Workshop site VIS-a vis including loading, unloading & stacking etc as required, a) Upto the lead range 25 KM. b) Beyond 25 Km upto the lead of 50 KM(Supply by TSECL)	1			
3	Carriage of line materials such as cable, AAC, AAAC, ACSR,G.I wire,Cross Arm,Stay set,Insulators etc.by Mechanical Transport from the Electrical Sub-Divisional site store to working site Vis -a-vis, including loading, unloading and stacking as required upto the lead of 25 KM to 50KM .(Supply by TSECL)	2	Trip		
4	Carriage of G.O.S,D.O.F,L.A etc by Mechanical Transport from the Electrical Sub-Divisional Site Store to working site Vis-à-vis including loading,unloading and stacking as required. A) Upto the lead range 0-25 KM(Supply by TSECL)	0.35	MT		
C	ERECTION OF THE FOLLOWING				
1	Erection of 9 Mtr length of pcc pole at any kind of soil upto a depth of 1/6 th of pole height,including excavation of earth,refilling the pit with soil upto the ground level ramming and making complete in all respect.(Supply by TSECL)	4	No		
2	Erection of 11 KV,DOF unit set of three nos.including necessary connection complete as per technical specification. (Excluding the cost of back clamp,Nuts & Bolts). (Supply by TSECL)	2	Set		
3	Erection of 11 KV, 200 Amps G.O.S unit set of three nos.including necessary connection complete as per technical specification. (Excluding the cost of back clamp, Nuts & Bolts). (Supply by TSECL)	2	Set		



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4	Laying & stringing of 1 KM(Single Conductor) ACSR 6/1/3.35 mm dia RABBIT including hoisting & binding etc. Complete as required. (Supply by TSECL).	0.15	Km		
5	Erection of 11 KV Pin Insulator along with Pin. (Supply by TSECL)	18	No		
6	Erection of 11 Kv Single Disc insulator set along with necessary fittings (Supply by TSECL)	6	No		
7	Erection of M.S Channel Cross -Arm 1.3 to 2.8 Mtr long 75 x 40 X 40 X 6 mm(Excluding the cost of back Clamp,Nuts & Bolts).(Supply by TSECL)	14	No		
8	Fabrication of Cross- Arms by MS Channel/MS Angle as per Specification.	280	Kg		
9	Earthing with G.I pipe 2.5 mtr Long and 40 mm dia, including excavation,refilling with alternate layer of salt & Charcoal as per drawing (excluding supply of G.I Pipe ,Salt & Charcoal,G.I wire,Nuts & bolts etc as required).	4	Set		
10	Laying of 8 SWG wire at 300 mm below the ground level for earthing of sub-station equipments from earth electrode.(Supply by TSECL)	4	Set		
11	Erection of Bi-Metallic lugs of 120 Sq mm-12 (Supply by TSECL)	63	No		
12	Erection of of Stay set direct in earth complete with 19 mm X 1800 mm long stay rod,anchor plate of size 300 X 300 X 8 mm thimble turn buckle,7/3.15 mm dia G.I standred stay wire and stain insulator etc with Supply of M.S Clamp,Nuts 7 Bolts etc as required and making complete in all respect.(Supply by TSECL)	4	Set		
13	1"dia PVC pipe	20	Mtr		



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14	Errrection of Cupper Strip (300x50X6mm) on tranfo. Stud with necessary febrication of holes and brass Nuts & bolts.	4	No		
15	Fitting fixing of L.T Cut Outs(Set of 3 nos) on wooden plank (prefereably Korai wood) of size 24" X 10"X1.5" & cable connection with termination by lugs/thimble complete (i/c supply of wooden plank, screwes & MS clamp excluding cost of thimble)(Cut Out will be Supply by TSECL)	1	Set		
16	Laying of one number PVC insulated and PVC sheathed / XLPE power cable of 11 KV grade of following size direct in ground including excavation,sand cushioning, protective covering and refilling the trench etc as required. TrenchSize:-Width-350 mm,Hieght-1200 mm/Sand (Coughioning) Hieght-250mm,Width-350 mm/protection:-Double layer Brick. Above 120 sq. mm Upto 400 Sq.mm	220	Mtr		
17	Manually digging /drilling horizontally or diagonali direction for road crossing / Water supply line/Telcommunication line /Gas Pipe line etc. including Laying of 64 to 200mm dia GI pipe direct into the earth at a depth of minimum 1100mm below the ground surface with out effecting the existing road including excavation earth for entry pit as per site condition and direction of Engineering In Charge.	20	Mtr		
18	Laying of one number PVC insulated and PVC sheathed / XLPE power cable of 1.1 KV grade of following size direct in ground including excavation,sand cushioning, protective covering and refilling the trench etc as required. (Double Layer cable) TrenchSize:-Width-350mm,Hieght-750mm/Sand (Coughioning) Hieght-250mm, Width-350mm/ protection:-Double layer Bricks. Above 95 Sq.mm upto 185 Sq.mm.	120	Mtr		
19	Supply & making making Outdoor cable end termination with heat shrinkable jointing kit complete with all accessories including lugs suitable for following size of 3 Core ,XLPE aluminium conductor cable of 11 Kv grade as required.(Above 120 sq. mm Upto 300 Sq.mm)	4	No		
20	Erection of Indoor/Outdoor type L.T cable heat shrinkable jointing kit complete for XLPE 3C X 120 Sq mm	4	Set		



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21	Coiling of excess Single/3 core/ 3½ core upto to 400 sqmm.HV/MV, XLPE insulated, armoured power cable direct into earth including excavation of earth upto a depth of 1500 mm (Size pit should be 2250 mm X 2250 mm or as per site requirement, including 1st class brick protection of two layer flat brick soling,300 mm .Fine sand (Local quarry) for cushioning/bed and refilling and ramming the excavated soil as per direction of Engineer in Charge.	4	Job		
22	Laying of one number PVC insulated and PVC sheathed / XLPE power cable of 11 KV grade of all Size in the GI Pipe/HDPE for riser including tieup of pipe with pole by the MS flat clamp(excluding cost of clamp and Nut & bolts) as required. up to 400 sq.mm.	12	Mtr		
23	Providing of of Pre-cast cement concretecable identification route marker (1 cement: 2 coarse sand : 4 graded stone aggregate 6mm nominal size) reinforced with 1.6 mm dia mild steel wire including centring and shuttering, roughening cleaning, fixing and finishing in cement mortar 1:3(1cement: 3 fine sand) etc. complete, excluding the plastering of jambs, sills and soffits as per design, drawing and specification of TSECL. The marker shall be embossed "DANGERS: TSECL, ELECTRIC POWER CABLE" with Black colour letter(both side). The visible part shall be painted with Yellow colour japan paint. (1 cement: 2 coarse sand: 4 graded stone aggregate 6mm nominal size) reinforced with 1.6 mm dia mild steel wire including centring and shuttering, roughening cleaning, fixing and finishing in cement mortar 1:3(1cement: 3 fine sand) etc. complete, excluding the plastering of jambs, sills and soffits.	6	No		