

13. CABLES

Cables of required size to be used in the system shall have the following characteristics:

- i. Shall meet IEC 60227/IS 694, IEC 60502/IS1554 standards
- ii. Temp. Range: -10°C to $+80^{\circ}\text{C}$.
- iii. Voltage rating 660/1000V
- iv. Excellent resistance to heat, cold, water, oil, abrasion, UV radiation
- v. Flexible
- vi. Sizes of cables between array interconnections, array to junction boxes, junction boxes to Inverter etc. shall be so selected to keep the voltage drop (power loss) of the entire solar system to the minimum. The cables (as per IS) should be insulated with a special grade PVC compound formulated for outdoor use.
- vii. **Cable Routing/ Marking:** All cable/wires are to be routed in a RPVC pipe/ GI cable tray and suitably tagged and marked with proper manner by good quality ferule or by other means so that the cable easily identified.
- viii. The Cable should be so selected that it should be compatible up to the life of the solar PV panels i.e. 25 years.
- ix. The ratings given are approximate. All the cables required for the plant are to be provided by the bidder. Any change in cabling sizes if desired by the bidder/approved after citing appropriate reasons.
- x. Multi Strand, annealed high conductivity copper conductor PVC type 'A' pressure extruded insulation or XLPE insulation. Overall PVC/XLPE insulation for UV protection Armored cable for underground laying. All cable trays including covers to be provided. All cables conform to latest edition of IEC/equivalent BIS Standards as specified below: BoS item / component Standard Description Standard Number Cables General Test and Measuring Methods, PVC/XLPE insulated cables for working Voltage up to and including 1100 V, UV resistant for outdoor installation IS /IEC 69947. Aluminum cable may be used on the AC-side of the PV system.
- xi. The size of each type of DC cable selected shall be based on minimum voltage drop however; the maximum drop shall be limited to 1%.
- xii. The size of each type of AC cable selected shall be based on minimum voltage drop however; the maximum drop shall be limited to 2 %.

14. CONNECTIVITY

The maximum capacity for interconnection with the grid at a specific voltage level shall be as specified in the GERC regulation for Grid connectivity and norms of DISCOM and amended from time to time.

15. DRAWINGS & MANUALS:

- Operation & Maintenance manual/user manual, Engineering and Electrical Drawings shall be supplied along with each power plant. The manual shall include complete system details such as array lay out, schematic of the system, inverter details, working principle etc. Step by step maintenance and troubleshooting procedures shall be given in the manuals and provided to the beneficiary.
- ISI marked (wherever applicable) and reputed makes equipment be used.

16. SOLAR PV SYSTEM ON THE ROOFTOP

The Solar PV system on the rooftop of the premises will be installed for PV capacity permitted by GETCO as per regulation issued by GERC.

17. SAFETY MEASURES:

The bidder shall take entire responsibility for electrical safety of the installation(s) including connectivity with the grid and follow all the safety rules & regulations applicable as per Electricity Act, 2003 and CEA Safety Regulation 2010 etc.

18. DOCUMENTATION:

Operation & Maintenance manual / user manual shall be supplied along with each power plant. The manual shall include complete system details such as array lay out, schematic of the system, inverter details, working principle etc. Step by step maintenance and troubleshooting procedures shall be given in the manuals and provided to the beneficiary.

19. SHADOW ANALYSIS:

The shadow analysis report with the instrument such as Solar Pathfinder or professional shadow analysis software of each site has to be submitted by Bidder and shall be his responsibility to educate the user to install the system only in shadow free space. Lower performance of the system due to shadow effect shall be the responsibility of the bidder and shall be liable for penalty for lower performance.

Quality Certification, Standards and Testing for Grid-Connected Rooftop Solar PV Systems/Power Plants

Solar PV Modules/Panels	
IEC 61215 and IS 14286	Design Qualification and Type Approval for Crystalline Silicon Terrestrial Photovoltaic (PV) Modules
IEC 61701:2011	Salt Mist Corrosion Testing of Photovoltaic (PV) Modules
IEC 61853- 1:2011 / IS 16170-1:2014	Photovoltaic (PV) module performance testing and energy rating – Irradiance and temperature performance measurements, and power Rating.
IEC 62716	Photovoltaic (PV) Modules – Ammonia (NH ₃) Corrosion Testing (as per the site condition like dairies, toilets etc)
IEC 61730-1,2	Photovoltaic (PV) Module Safety Qualification – Part 1: Requirements for Construction, Part 2: Requirements for Testing
IEC 62804	Photovoltaic (PV) modules – Test method for detection of potential-induced degradation. IEC 62804-1: Part 1: Crystalline Silicon
Solar PV Inverters	
IEC 62109 or IS : 16221	Safety of power converters for use in photovoltaic power systems – Part 1: General requirements, and Safety of power converters for use in photovoltaic power systems Part 2: Particular requirements for inverters. Safety compliance (Protection degree IP 65 or better for outdoor mounting, IP 54 or better for indoor mounting)
IS/IEC 61683 latest (as applicable)	Photovoltaic Systems – Power conditioners: Procedure for Measuring Efficiency (10%, 25%, 50%, 75% & 90-100% Loading Conditions)
IEC 60068-2 /IEC 62093 (as applicable)	Environmental Testing of PV System – Power Conditioners and Inverters
IEC 62116:2014/ IS16169	Utility-interconnected photovoltaic inverters - Test procedure of islanding prevention measures
Fuses	
IS/IEC 60947 (Part 1, 2 & 3), EN 50521	General safety requirements for connectors, switches, circuit breakers (AC/DC): 1) Low-voltage Switchgear and Control-gear, Part 1: General rules 2) Low-Voltage Switchgear and Control-gear, Part 2: Circuit Breakers 3) Low-voltage switchgear and Control-gear, Part 3: Switches,

	dis-connector switch-dis-connector and fuse-combination units 4) EN 50521: Connectors for photovoltaic system-Safety requirements and tests
IEC 60269-6:2010	Low-voltage fuses - Part 6: Supplementary requirements for fuse-links for the protection of solar photovoltaic energy systems
Solar PV Roof Mounting Structure	
IS 2062/IS 4759/AA6063 T6	Material for the structure mounting
Surge Arrestors	
BFC 17-102:2011/ NFC 102:2011/ IEC 62305	Lightening Protection Standard
IEC 60364-5-53/ IS15086-5 (SPD) IEC 61643- 11:2011	Electrical installations of buildings - Part 5-53: Selection and erection of electrical equipment - Isolation, switching and control Low-voltage surge protective devices - Part 11: Surge protective devices connected to low-voltage power systems - Requirements and test methods
Cables	
IEC 60227/IS 694, IEC60502/IS 1554 (Part 1 & 2)/ IEC69947 (as applicable)	General test and measuring method for PVC (Polyvinyl chloride) insulated cables (for working voltages up to and including 1100 V, and UV resistant for outdoor installation)
BS EN 50618	Electric cables for photovoltaic systems (BT(DE/NOT)258), mainly for DC Cables
Earthing /Lightning	
IEC 62561/IEC 60634 Series (Chemical earthing) (as applicable)	IEC 62561-1: Lightning protection system components (LPSC) - Part: Requirements for connection components IEC 62561-2: Lightning protection system components (LPSC) – Part 2: Requirements for conductors and earth electrodes IEC 62561-7: Lightning protection system components (LPSC) - Part 7: Requirements for earthing enhancing compounds
Junction Boxes	
IEC 60529	Junction boxes and solar panel terminal boxes shall be of the thermo-plastic type with IP 65 or better protection for outdoor use, and IP 54 or better protection for indoor use

GUARANTEE AND CMC

(a) Guarantee

The Grid connected Solar Photovoltaic System for the project supplied, installed and commissioned shall be guaranteed by the empaneled agency for a minimum period of 5- years from the date of successfully commissioning of the last system, in regard to quality of design, material, workmanship, quality of process/ manufacturing, performance, efficiency, installation, etc.

In the event any defect is found or developed in the system within guarantee period, shall be rectified/replaced by the Empaneled Agency at his own expense promptly.

In case the defects are not rectified within 2 (Two) days of the receipt of the complaint by the Empaneled Agency, GETCO shall have full liberty to rectify such defect or undertake such repairs as may be necessary to restore the system in working condition at the risk and cost of the Empaneled Agency.

The expenditure so incurred by GETCO shall be deducted from EOI applicant's pending claims, security, etc. and if necessary may be recovered in other mode provided under the law. In the event of failure of the complete system, if necessary, the whole system shall be replaced by the Empaneled Agency promptly.

(b) CMC: - Comprehensive Maintenance Contract for 5 years: - (Resolving Complaints related to defects/ non-working / poor performance of the system)

This EOI Document cover Five-year Comprehensive Maintenance Contract under the scope of EOI applicant.

The Five-year Comprehensive Maintenance Contract shall include comprehensive on-site guarantee and warranty for all materials and components of the system under the project as mentioned above in para no 16(a).

During this CMC period the Empaneled Agency has to repair/replace the defective part/s or the material/s or any or all Components of the System to make it in working condition without loss of performance or degradation in efficiency and without compromising safety aspects free of cost within 48 (Fort eight) Hours of time limit as soon as the complaint is received from the GETCO. Also the Empaneled Agency has to undertake regular/periodical preventive maintenance of the system to avoid any future fault in the system and to improve the solar yield.

During the CMC period, the inverter monitoring, monitoring and controlling, shall be done by EOI applicant. Hence necessary reports shall be submitted by the EOI applicant in the soft/hard copies periodically to the concern authority of the GETCO as and when asked.

a) Logging of complain:

The record of each and every complaint received and resolve with down time and up time shall have to be maintained by the Empaneled Agency in register as well as computer based software and shall have to be submitted to GETCO office In each quarter.

- b) While doing repairing or rectification work, the Empaneled Agency's technician or any person is not authorized to work on GETCO's electric line of 11 KV and LT having potential danger of electricity.

In case the defects are not rectified within 2 (Two) days from the receipt of the complaint by empaneled agencies than penalty of Rs 200 per day is applicable till the complaint is resolved.

This penalty shall be payable to GETCO, in case of empaneled agency failed to pay the same, it will be recovered from the PBG or may be recovered in other mode provided under the law. In the event of failure of the complete system, if necessary, the whole system shall be replaced by empaneled agencies within 15 days failing which 0.5% per day plus GST and cess on the particular project value subject to maximum of 10% of the project value plus applicable GST and cess to be recovered from the PBG.

(C) Generation Guarantee:

(c)-1

The Bidder shall provide a minimum generation guarantee corresponding to a capacity utilization factor (CUF) of 17% (the "Guaranteed CUF") with respect to the AC capacity of the PV system.

(c)-2

This Guaranteed CUF shall be calculated on an annual-basis and shall be verified by the GETCO at the end of each year during the 5 year guarantee period.

(c)-3

1% degradation in guaranteed CUF every year-on year basis for Five year will be considered.

(c)-4

In case of Guaranteed CUF is found below 17% than GETCO shall recover an amount at the rate of Rs.5.00 +Applicable GST per kWh from the Empanelled Agency for such shortfall at the end of the contract year to compensate the same.

Periodical maintenance:

The record of down time and up time and periodical maintenance at least in every quarter shall have to be maintained by the Empanelled Agency in register as well as computer based software and shall have Mandatorily to be submitted to GETCO at the end of every Quarter. Non submission of the report shall be considered as "Breach of Contract" and shall attract punitive actions like encashment of PBG will be applicable and the decision of GETCO shall be final in this regard.

Notices, Statements and other communications sent by GETCO through registered post or e-mail or fax to the EOI applicant / Empanelled Agency at his specified address shall be deemed to have been delivered to the EOI applicant.

GUIDELINES FOR AGENCY:

1. It is mandatory for EOI applicant to have valid test report of SPV Modules and grid tie inverters with similar or larger capacity from MNRE approved laboratories.
2. The program implementation guidelines of the MNRE, as declared from time to time, for SPV program shall be applicable and followed at all times.
3. The technical specification, scope of work for which EOI Document is invited are furnished in EOI Document
4. The quantity mentioned in the EOI Document is only indicative and not final. Payment will be done only for the actual quantity executed.
5. Cost of Comprehensive Maintenance during Guarantee and warranty period and Insurance of system for 5 years is required to be included in the quoted prices.
6. The Empaneled Agency shall be responsible for overall project management, system integration and testing to complete all criteria for successful functioning of the Grid connected Solar PV plant, but not limited to the functions laid down in this documents.
7. It shall be the responsibility of the bidder to clean the modules though out the five (5) years CMC period to ensure a capacity utilization factor of 17% on annual basis to be measured at inverter/ Solar meter.
8. It shall be mandatory for the vendor to visit the system installation sit every 3 months and submit a report to GETCO duly signed by the authority in prescribed format.

SPECIAL CONDITIONS OF CONTRACT

1.0 General Particulars:

This part of the Bid Document relates to certain specific/special terms and conditions particular to the Contract. The provisions herein are to be read and understood in conjunction with the relevant provisions elsewhere in the Instructions to Bidders (ITB), the General Conditions of Contract (GCC) and Erection Conditions of Contract (ECC). The intent of provisions herein is specific to this contract and are, in general, supplementary to related provisions under ITB, GCC and ECC. However, in certain provisions which are contrary to those in ITB, GCC and ECC, the provisions in these Special Conditions of Contract will prevail.

2.0 Tender Fee:

- Payment of tender Fees should be by RTGS/NEFT/IMPS.

3.0 Earnest Money Deposit (EMD):

- Payment of EMD should be by RTGS/NEFT/IMPS.
- Unsuccessful Bidder's bid security/EMD will be returned/refunded on finalization of tender or three months from the date of submission of tender whichever is later.
- The successful bidders, Bid Security will be discharged upon, furnishing the contract submission of Security Deposit
- The bid guarantee may be forfeited.
 - a) If a Bidder withdraws its bid during the period of bid validity specified by the bidder on the bid Form:
 - b) If a bidder refuses to accept the contract or fails to commence the works (including supplies within thirty days of letter of award of contract)

4.0 Declaration by bidder:

The Bidder shall sign the Declaration enclosed to this SCC and not furnishing the same will make the Bid invalid.

5.0 Technical Qualifying Criteria:

As per Qualification requirement clause No.- 2

6.0 Financial Qualifying Criteria:

As per Qualification requirement clause No.- 2

7.0 Price Inclusions (including Taxes & Duties):

- 7.1 The prices quoted shall be all inclusive of freight, Octroi, transportation, loading, – unloading & stacking at site of equipment materials received at mentioned location after observing all store formalities of GETCO.
- 7.2 No extra payment toward any type of templates and erection tools /materials will be made.

7.3 GST:

Every bidder shall inform their GSTIN No. of the registered place(s) where from the bidder intends to supply the goods / services, meaning thereby the bidder has to supply the goods / services from the relevant declared / registered place

- i. Contractor has to submit the GST Registration certificate
- ii. Contractor has to submit invoice/Challan as documentary proof with each RA bill & Final Bill and in which it shall be specifically mention the nature of service & code SAC code under which the amount of service tax GST payable by contractor and payable by GETCO (if any))without fail.
- iii. GETCO will withheld the GST amount of contractor and it shall be reimbursed on production of documents evidences of payment made by contractor
- iv. The Contractor has to submit invoice to GETCO indicating following.
 - Name, address and GST registration no. of the service provider
 - Name and address of person receiving the service i.e. GETCO
 - Description and value of taxable service provided
 - The total GST payable thereon with bifurcation of GST payable by service provider and service receiver.
 - Rate and amount of taxes i.e. CGST/ SGST/ IGST/UGST
 - Place of supply along with the name of State, in case of a supply in the course of inter-State trade or commerce i.e. Out of Gujarat Supply
 - Applicable SAC CodeContractor has to also supply tax invoice as described under GST rules and Regulation indicating GSTIN
- v. Contractor has to provide Tax invoice in a standard format as per CGST act, CGST rules 2017 and GST invoicing rules containing all details as provided in Act and rules. Contractor / Supplier has to mention GST no. of GETCO i.e. 24AABCG4029R2ZC in the invoice invariably & failure of which payment will not be made.

Supplier/Contractor should charge GST in Invoice at the rate as agreed to / mentioned in acceptance of tender only and any deviation in the same shall not be accepted. Further, any additional liability of GST (later on due to wrong mentioning of GST rate, mis-interpretation of HSN/SAC Code, etc.) over and above as charged in the invoice shall be borne by the Supplier/Contractor. However, any refund received by the supplier / contractor on account of GST charged from the company; such refund shall have to be passed on to the company, along with interest if any. Such refund along with interest needs to be passed on suo-moto by the supplier / contractor.

Further, the Company has a right to recover the amount of GST along with penal interest at the rate of 15% per annum if GST charged is not paid / short paid to the government or fail to upload the details or uploads inaccurate particulars on GSTIN portal by the Supplier / Contractor within the stipulated time limit.

In case, Govt. revises the rate of GST rate / Code during the tenure of the contract, the provision of statutory variation clause shall apply.

TDS Under GST at Prevailing rate will be detected from bills in accordance with the provision of section 51 of the CGST act 2017 in concurrence with other GST act and allied rules. Certificate will be issued to the contractor for the deduction

7.4 Statutory Variations:

Any statutory increase or decrease in the taxes and duties including GST and Cess as applicable or in the event of introduction of new tax/cess or cessation of existing tax/cess subsequent to suppliers offer if it takes place within the original contractual delivery date will be to COMPANY's account subject to the claim being supported by documentary evidence. However, if any decrease takes place after the contractual delivery date, the advantage will have to be passed on to COMPANY.

Statutory Variation clause will not be applicable in case of Supplier / Contractor has opted for Composition Scheme under GST.

7.5 **Income Tax**

Income tax at source at the prevailing rate will be deducted from bills in accordance with the provision of Income-Tax Laws and to that effect a certificate will be issued to the contractor.

8.0 **SECURITY DEPOSIT / PERFORMANCE GUARANTEE**

- 8.1 The successful bidder has pay security deposit within **15 working days** of receipt of LOI.
- 8.2 The successful bidder will be required to pay an amount equivalent to **5%** of the value of the order as a Security Deposit for satisfactory execution of the contract. Such Security Deposit will be payable either in DD/BG payable at Himatnagar. Bank guarantees from Scheduled/Nationalized Banks will be acceptable.
- 8.3 No interest will be allowed on amount of Security deposit.
- 8.4 **For Rooftop Solar Installation- Security Deposit shall be released on submission of 20% Performance Guarantee which valid for a period of 5 years from Date of commissioning of System (Dt. of Installation of Meter). The same shall be return on receipt of N.O.C. by the concerned EE (TR.)**
- 8.5 This security deposit is for the performance of contract and the same is liable to be forfeited by the in event of non-fulfillment of the term and conditions of this contract by the contractor.
- 8.6 Corporate Guarantees are not admissible.
- 8.7 The Signing of Contract and Contract Agreements will be done as per relevant Terms and Conditions.
- 8.8 Contractor shall pay SD within stipulate time if SD is not paid by contractor than EMD Will is forfeited.

9.0 **GUARANTEE PERIOD:**

Total work executed shall be covered under guarantee period against any defect in poor workmanship etc. for a period of **Five year** from the date of commissioning.

9.0A **BAR CHARTS**

The Bidder shall furnish along with the bid, the bar charts and project schedules indicating starting and completion dates of each activity. This is mandatory condition the tenders without which shall be liable to be rejected.

10.0 **PENALTY FOR DELAY:**

- 10.1 The tenderer should note that the completion time allowed for carrying out the work should be strictly observed. Any delay that may take place in supply and erection beyond

Contractual cutoff date stated as per stipulated delivery period shall be subject to the penalty at the rate of ½ % per week or part thereof on delayed portion of the work subject to ceiling of 10% of total contract value will be impose.

10.2 The penalty will be deducted from bills payable either against this contract or from any Bank Guarantee or any other amount payable under any other contract with the GETCO.

11.0 COMPLETION PERIOD

11.1 Overall Completion period for this Contract will be **270 Days.**

11.2 Instruction for mobilization or stoppage period will be as per required as per condition during this period of the Contract.

11.3 The completion date will be deemed to be the date on which all works on the Contract are demonstrated to be complete to the satisfaction of the /Engineer and is complete in all respects as per the terms and conditions of this Contract.

12.0 The validity of tender is 180 days from the date of opening of technical bid.

13.0 Insurance:

The Bidder's insurance liabilities pertaining to the scope of Works are detailed out in Clauses titled Insurance, in General Terms and Conditions of Contract and in Erection Conditions of this Part-I. Bidder's attention is specifically invited to these clauses. Bid price shall include all the costs in fulfilling all the insurance liabilities under the Contract.

12.0 Presentation of Bills

12.1 RA bills for allotted sub-order and work executed including cost of material consumed is to be prepared in triplicate and submitted to Site in-charge of the work, for necessary payment. These bills shall be serially numbered with suffix SE-I.

12.2 Balance 20% payment shall be released only after finalization of material account and passing of final bill. The contractor has to submit the final bill along with the material consumption statement and other required data of the work carried out within 3 months from the date of completion of work. These bills shall be serially numbered with suffix SE-I.

12.3 All the bills in accordance with the above clauses must be submitted with the following information:

- a) Item wise work done during billing period.
- b) Item wise cumulative work done.
- c) Account for material consumed and balance stock.

12.4 For non-submission or part submission of above information, an additional 5% amount of the Respective RA bill shall be withheld and shall only be released at the time of final bill.

13.0 Terms of Payment

All payments made during the Contract shall be on account payments only. The payment will be made on fulfillment of all his liabilities under the Contract and production of work completion certificate of the Sub-Station in-charge, after following the procedures of GETCO.

Payment will be made by concern Division offices under which work executed.

The payment terms towards the supply, installation, commissioning and 5 year CMC shall be as follows.

- 80% of the order value upon certification of GEDA/third party approved by GEDA and commission of the system upon installation of the Bi-directional & solar meter and complete the installation process with uploading of all documents on GEDA online portal, or as may be specified.
 - Bills
 - Installation certificate duly signed by beneficiary/ GEDA official/ third party showing its commissioning date (Dt. of installation of the Bi-directional meter installation)
- Remaining 20% of the order value against the equivalent amount of performance guarantee valid for a period of 5 years from the date of commissioning of the system (Dt. of meter installation). Security deposit shall be released with this 80% payment against NOC from respective Division offices.
- Invoice with all statutory requirement as above will be submitted to respective Division office for payment carried out by respective offices.
- The payment to the Contractor for the performance of the works under the Contract will be made by the Owner as per the guidelines and conditions specified herein. All payments made during the Contract shall be on account payments only. The final payment will be made on completion of all Works and on fulfillment by the Contractor of all his liabilities under the Contract.
- Currency of Payment: All payments under the Contract shall be in Indian Rupees only.
- Terms: Payment terms will be as prescribed in the special conditions of contract and on fulfillment of conditions specified thereof.
- Mode of Payment: Payment made by GETCO through RTGS only directly to Owner's Bank or directly to the Contractor Bank account as per the payment schedule.
- The payment of test charges, if any, payment, taxes and duties (whenever admissible) inland transportation (including port handling), insurance and the erection portion of the Works shall be made direct to the Contractor by the Owner.
- All payments under the Contract shall be made as stipulated in the Special Conditions of Contract after signing the Contract Agreement. The payments linked with the dispatch of materials shall only be made after production of all dispatch documents as specified in the relevant Contract conditions which will inter alia include the Material Inspection Clearance Certificate issued by the Owner.

14.0 RISK DISTRIBUTION INSURANCE

The Contractor at his cost shall arrange, secure and maintain all insurance as may be pertinent to the Works and obligatory in terms of law to protect his interest and interests of the Owner against all perils detailed herein. The form and the limit of such insurance as defined herein together with the under-writer in each case shall be acceptable to the Owner. However, irrespective of such acceptance, the responsibility to maintain adequate insurance coverage at all time during the period of Contract shall be of Contractor alone. The Contractor's failure in this regard shall not relieve him of any of his contractual responsibilities and obligations. The insurance covers to be taken by the Contractor shall be in the joint name of the Owner and the Contractor. The Contractor shall, however, be authorized to deal directly with Insurance Company or Companies and shall be responsible in regard to maintenance of all insurance covers. Further the insurance should be in freely convertible currency.

Any loss or damage to the equipment during handling, transportation, storage, erection, putting into satisfactory operation and all activities to be performed till the successful completion of commissioning of the equipment shall be to the account of the Contractor. The

Contractor shall be responsible for preference of all claims and make good the damages or loss by way of repairs and/or replacement of the equipment, damaged or lost. The transfer of title shall not in any way relieve the Contractor of the above responsibilities during the period of Contract. The Contractor shall provide the Owner with copy of all insurance policies and documents taken out by him in pursuance of the Contract. Such copies of documents shall be submitted to the Owner immediately after such insurance coverage. The Contractor shall also inform the Owner in writing at least sixty (60) days in advance regarding the expiry/cancellation and/or change in any of such documents and ensure revalidation, renewal etc., as may be necessary well in time.

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

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

The clause entitled 'Insurance' under the section ECC of this Volume-I, covers the additional insurance requirements for the portion of the works to be performed at the Site.

Special Conditions of Contract details out the various insurance liabilities.

LIABILITY FOR ACCIDENTS AND DAMAGES

Under the Contract, the Contractor shall be responsible for loss or damage to the plant until the successful completion of commissioning as defined elsewhere in the Bid document.

DELAYS BY OWNER OR HIS AUTHORISED AGENTS

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

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

In addition, the Contractor shall be entitled to claim demonstrable and reasonable compensation if such delays have resulted in any increase in cost. The Owner shall examine the justification for such a request for claim and if satisfied, the extent of compensation shall be mutually agreed depending upon the circumstances at the time of such an occurrence.

15.0 FORCE MAJEURE

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

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

Provided either party shall within fifteen (15) days from the occurrence of such a cause notify the other in writing of such causes.

The Contractor or the Owner shall not be liable for delays in performing his obligations resulting from any force major cause as referred to and/or defined above

The date of completion will, subject to hereinafter provided, be extended by a reasonable time even though such cause may occur after Contractor's performance of obligation has been delayed due to other causes.

16.0 SUSPENSION OF WORK

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

Any necessary and demonstrable cost incurred by the Contractor as a result of such suspension of the works will be paid by the Owner, provided such costs are substantiated to the satisfaction of the Engineer. The Owner shall not be responsible for any liabilities if suspension or delay is due to some default on the part of the Contractor or his Sub-Contractor.

17.0 CONTRACTOR'S DE FAULT

If the Contractor shall neglect to execute the works with due diligence and expedition or shall refuse or neglect to comply with any reasonable order given to him, in writing by the Engineer in connection with the works or shall contravene the provisions of the Contract, the Owner may give notice in writing to the Contractor to make good the failure, neglect or contravention complained of. Should the Contractor fail to comply with the notice within thirty (30) days from the date of serving the notice, then and in such case the Owner shall be at liberty to employ other workmen and forthwith execute such part of the works as the Contractor may have neglected to do or if the Owner shall think fit, without prejudice to any other right he may have under the Contract to take the work wholly or in part out of the Contractor's hands and re-contract with any other person or persons to complete the works or any part thereof and in that event the Owner shall have free use of all Contractor's equipment that may have been at the time on the Site in connection with the works without being responsible to the Contractor for fair wear and tear thereof and to the exclusion of any right of the Contractor over the same, and the Owner shall be entitled to retain and apply any balance which may otherwise be due on the Contract by him to the Contractor, or such part thereof as may be necessary, to the payment of the cost of executing the said part of the Works or of completing the Works as the case may be. If the cost of completing of works or executing part thereof as aforesaid shall exceed the balance due to the Contractor shall pay such excess. Such

payment of excess amount shall be independent of the liquidated damages for delay which the Contractor shall have to pay if the completion of works is delayed.

In addition, such action by the Owner as aforesaid shall not relieve the Contractor of his liability to pay liquidated damages for delay in completion of Works as defined in Clause 14.0 of this Section.

Such action by the Owner as aforesaid the termination of the Contract under this clause shall not entitle the Contractor to reduce the value of the Contract Performance Guarantee nor the time thereof. The Contract Performance Guarantee shall be valid for the full value and for the full period of the Contract including guarantee period.

19.0 TERMINATION OF CONTRACT ON OWNER'S INITIATIVE

The Owner reserves the right to terminate the Contract either in part or in full due to reasons other than those mentioned under clause entitled 'Contractor's Default'. The Owner shall in such an event give fifteen (15) days' notice in writing to the Contractor of his decision to do so.

The Contractor upon receipt of such notice shall discontinue the work on the date and to the extent specified in the notice, make all reasonable efforts to obtain cancellation of all orders and Contracts to the extent they are related to the work terminated and terms satisfactory to the Owner, stop all further sub-contracting or purchasing activity related to the work terminated, and assist Owner in maintenance, protection, and disposition of the works acquired under the Contract by the Owner.

In the event of such a termination the Contractor shall be paid compensation, equitable and reasonable, dictated by the circumstances prevalent at the time of termination.

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

20.0 FRUSTRATION OF CONTRACT

In the event of frustration of the Contract because of supervening impossibility in terms of Section 56 of the Indian Contract Act, parties shall be absolved of their responsibility to perform the balance portion of the Contract, subject to provisions contained in sub-clause 45.3 below.

In the event of non-availability or suspension of funds for any reasons, whatsoever (except for reason of willful or flagrant breach by the Owner) and/or Contractor then the works under the Contract shall be suspended.

Furthermore, if the Owner is unable to make satisfactory alternative arrangements for financing to the Contractor in accordance with the terms of the Contract within three months of the event, the parties hereto shall be relieved from carrying out further obligations under the Contract treating it as frustration of the Contract.

In the event referred to in sub-clauses 45.1 & 45.2 above the parties shall mutually discuss to arrive at reasonable settlement on all issues including amounts due to either party for the work already done on quantum merit_ basis, which shall be determined by mutual agreement between the parties.

21.0 GRAFTS AND COMMISSIONS ETC.

Any graft, commission, gift or advantage given, promised or offered by or on behalf of the Contractor or his partner(s), agent(s), officer(s), director(s), employee(s) or servant(s) or any one on his or their behalf in relation to the obtaining or to the execution of this or any other Contract with the Owner, shall in addition to any criminal liability which it may incur, subject the Contractor to the cancellation of this and all other Contracts and also to payment of any loss or damage to the Owner resulting from any cancellation. The Owner shall then be entitled to deduct the amount so payable from any monies otherwise due to Contractor under the Contract.

RESOLUTION OF DISPUTES

22.0 SETTLEMENT OF DISPUTES

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

If any dispute or difference of any kind, whatsoever, shall arise between the Owner and the Contractor, arising out of the Contract for the performance of the Works whether during the progress of the Works or after its completion or whether before or after the termination, abandonment or breach of the Contract, it shall, in the first place, be referred to and settled by the Engineer, who, within a period of thirty (30) days after being requested by either party to do so, shall give written notice of his decision to the Owner and the Contractor.

Save as hereinafter provided, such decision in respect of every matters so referred shall be final and binding upon the parties until the completion of the Works and shall forthwith be given effect to by the Contractor who shall proceed with the Works with all due diligence, whether he or the Owner requires arbitration as hereinafter provided or not.

If after the Engineer has given written notice of his decision to the parties, no claim to arbitration has been communicated to him by either party within thirty (30) days from the receipt of such notice, the said decision shall become final and binding on the parties.

In the event of the Engineer failing to notify his decision as aforesaid within thirty (30) days after being requested as aforesaid, or in the event of either the Owner or the Contractor being dissatisfied with any such decision, or within thirty (30) days after the expiry of the first mentioned period of thirty days, as the case may be, either party may require that the matters in dispute be referred to arbitration as hereinafter provided.

23.0 ARBITRATION

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.

The arbitration shall be conducted by three arbitrators, one each to be nominated by the Contractor and the Owner and the third to be appointed as an umpire by both the arbitrators

in accordance with the Indian Arbitration Act. If either of the parties fails to appoint its arbitrator within sixty (60) days after receipt of a notice from the other party invoking the Arbitration clause, the arbitrator appointed by the party invoking the arbitration clause shall become the sole arbitrator to conduct the arbitration.

The arbitration shall be conducted in accordance with the provisions of the Indian Arbitration Act, 1940 or any statutory modification thereof. The venue of arbitration shall be Nadiad.

The decision of the majority of the arbitrators shall be final and binding upon the parties. The arbitrators may, from time to time with the consent of all the parties enlarge the time for making the award. In the event of any of the aforesaid arbitrators dying, neglecting, resigning or being unable to act for any reason, it will be lawful for the party concerned to nominate another arbitrator in place of the outgoing arbitrator.

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 evidence or arguments put before the Engineer for the purpose of obtaining the said decision.

No decision given by the Engineer in accordance with the foregoing provisions shall disqualify him as being called as a witness or giving evidence before the arbitrators on any matter whatsoever relevant to the dispute or difference referred to the arbitrators as aforesaid.

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

24.0 RECONCILIATION OF ACCOUNTS

The Contractor shall prepare and submit every **one** month, a statement covering payments claimed and the payments received vis-à-vis the works executed, for reconciliation of accounts with the Owner. The Contractor shall also prepare and submit a detailed account of Owner Issue materials received and utilized by him for reconciliation purpose in a format to be discussed & finalized with the Owner before the award of Contract.

Welfare Cess

- As per the Welfare Cess Act, the welfare cess @ 1% is applicable on supply and erection items for supply, erection, testing & commissioning of substation, transmission lines, EPC/Turnkey projects and civil works.
- Contractor shall get registered under Welfare Cess Act before commencement of work. Office of the Factory Inspector is authorized at present as a registering authority.
- The welfare cess@1% is considered in the price schedules so; the bidders are requested to quote accordingly.
- GETCO shall pay the welfare cess by way of reimbursing to contractors on production of documentary evidence of payment.
- The contracts for which supply or part supply of material are in the scope of GETCO, then contractors shall deposit welfare cess on estimated cost of supplied items to GETCO on progressive basis of utilization. As this part of welfare cess is on GETCO account, the same shall be reimbursed to the contractor on receipt of request letter along with documentary evidence of payment. For calculation of welfare cess on supply part, valuation as per MR shall be taken and informed to the contractor for payment. This will be over and above the A/T value. The modality of payment/ reimbursement of welfare cess will be as under.
- On receipt of A/T, the contractor / bidder will get them registered under Welfare Cess Act and submit the documentary evidence to the concern office.

- Before release of payment of first R.A. Bill, the contractor has to submit the documentary evidence of registration. Only thereafter, the bill will be processed for payment.
- Before release of payment of subsequent R.A. Bills, the contractor has to submit the documentary evidence of payment of welfare cess of previous R.A. Bill.
- Before release of payment of final bill, the contractor has to submit documentary evidence of payment of welfare cess of previous R.A. Bill as well as of this final bill.
- If the R.A. Bill happens to be first and final bill, then before release of payment, contractor has to submit documentary evidence of registration under Welfare Cess Act and evidence of payment of welfare cess.
- The welfare cess shall be reimbursed to the contractor on submission of copy of documentary evidence of payment by observing due formalities.

Note: welfare tax shall be reimbursed on production of proof of such payments made by the contractor to the appropriate department.

25.0 GENERAL

The following shall supplement the conditions already contained in other parts of these specifications & document and shall govern the portion of the work of this Contract to be performed at Site.

The Contractor upon signing of the Contract shall, nominate a responsible officer as his representative at Site suitably designated for the purpose of overall responsibility and coordination of the works to be performed at Site. Such person shall function from the Site office of the Contractor during the pendency of Contract.

26.0 REGULATION OF LOCAL AUTHORITIES AND STATUTES

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. He shall abide by labour laws and others as specified in the special conditions of contract.

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. 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 also shall be borne by the Contractor.

27.0 OWNER'S LIEN ON EQUIPMENT

The Owner shall have lien on all equipment brought to the Site for the purpose of erection, testing and commissioning of the equipment to be supplied & erected under the Contract. The Owner 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.

28.0 ACCESS TO SITE AND WORKS ON SITE

Suitable access to and possession of the Site shall be afforded to the Contractor by the Owner in reasonable time.

The works so far as it is carried out on the Owner's premises, shall be carried out at such time as the Owner may approve and the Owner shall give the Contractor reasonable facilities for carrying out the works.

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 Engineer or his representative.

29.0 CONTRACTOR'S SITE ESTABLISHMENT

The Contractor shall at all times keep posted an authorized representative for the purpose of the Contract. Any written order or instruction of the Engineer or his duly authorized representative, shall be communicated to the said authorized resident representative of the Contractor and the representative shall be available at a stated address for this purpose.

30.0 CO-OPERATION WITH OTHER CONTRACTORS

The Contractor shall co-operate with all other Contractors or tradesmen of the Owner, who may be performing other works on behalf of the Owner and the workmen who may be employed by the Owner 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 the Owner, due to the Contractor's work shall promptly be made good at the Contractor's own expense.

31.0 DISCIPLINE OF WORKMEN

The Contractor shall adhere to the disciplinary procedure set by the Engineer 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.

32.0 CONTRACTOR'S FIELD OPERATION

The Contractor shall keep the Engineer 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 Engineer 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 the Engineer or the Owner or any of his representatives and no claim of the Contractor will 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.

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.

33.0 PROGRESS REPORT

The Contractor shall furnish three (3) copies each to the Engineer of progress including if any, photographs of the work done at Site.

The monthly progress report detailing-out the progress achieved on all erection activities shall highlight comparison 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.

34.0 MAN-POWER REPORT

The Contractor shall submit to the Engineer, on the first day of every month, a man hours schedule for the month, detailing the man hours scheduled for the month, skill-wise and area-wise.

35.0 PROTECTION OF WORK

The Contractor shall have total responsibility for protecting his works till it is finally taken over by the Engineer. No claim will be entertained by the Owner or by the Engineer 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.

36.0 EMPLOYMENT OF LABOUR

The Contractor will be expected to employ on the work only his regular skilled employees with experience of his particular work. No person below the age of eighteen years shall be employed.

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

In case the Owner becomes liable to pay any wages or dues to 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, the Owner may make such payment and shall recover the same from the Contractor's bills.

37.0 FACILITIES TO BE PROVIDED BY THE CONTRACTOR

Tools, tackles and scaffoldings

The Contractor shall provide all the construction equipment's; tools, tackles and scaffoldings required for pre-assembly, erection, of the Breaker, Bus-bar Gantry etc, covered under the Contract. He shall submit a list of all such materials to the Engineer before the commencement of work at Site. These tools and tackles shall not be removed from the Site without the written permission of the Engineer.

First-aid

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

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 personnel to keep the work area clean. 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.

LINES AND GRADES

All the works shall be performed to 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 will 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 Engineer 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 Engineer to enable the Contractor to proceed with his works. Any work done without being properly located may be removed and/or dismantled by the Engineer at Contractor's expense.

FIRE PROTECTION

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.

All the Contractor's supervisory personnel and select number of workers shall be trained for firefighting. Enough of such trained personnel must be available at the Site during the entire period of the Contract.

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 ensure the protection of all materials, equipment and works from theft, fire, pilferage and any other damages and loss.

39.0 PRE-COMMISSIONING TRIALS AND INITIAL OPERATIONS

The pre-commissioning trials and initial operations of the equipment erected by the Contractor shall be carried out in presence of contractor and is deemed considered as part of the work completion. If it is anticipated that the above test may prolong for a long time, the Contractor's workmen required for the above test shall always be present at Site during such tests and trials.

39.0 MATERIALS HANDLING AND STORAGE

All the equipment furnished under the Contract and arriving at Site shall be promptly received, unloaded, transported and stored in the storage spaces by the Contractor.

Contractor shall be responsible for examining all the shipment and notify the Engineer immediately of any damages, storage, discrepancy etc, for the purpose of Engineer's information only. The Contractor shall submit to the Engineer every week a report detailing all the receipts during the week. However, the Contractor shall be solely responsible for any shortages or damages 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.

The Contractor shall maintain an accurate and exhaustive record detailing out the list of all equipment materials received by him for the purpose of erection and keep such record open for the inspection of the Engineer in-charge.

All equipment shall be handled very carefully to prevent any damage or loss. The equipment stored shall be properly protected to prevent damage either to the equipment or to 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.

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 ring, commutators and other exposed parts shall be protected against moisture ingress and corrosion during storage and periodically inspected.

All the electrical equipment such as motors, generators, etc. shall be tested for insulation resistance at least once in three months from the date of receipt till the date of commissioning