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**VOLUME - I. :: SECTION - VI**

**GENERAL CONDITIONS FOR ERECTION (G C E)**

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**SECTION - VI****GENERAL CONDITIONS FOR ERECTION (GCE)****1.0 GENERAL:**

- 1.1 The following shall supplement the conditions already contained in the other parts of these specifications and documents and shall govern that portion of the work of this 'Contract' to be performed at 'Site'. The definitions given under section-IV of Volume-I (GCC) are applicable to this section also.
- 1.2 The Contractor upon award of 'Contract' shall, in addition to a Project Coordinator, nominate another responsible officer as his representative at Site suitably designated for the purposes 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'. This representative shall have full technical capability and complete administrative and financial powers to expeditiously and efficiently execute the works under this 'Contract'.
- 1.3 The Contractor shall proceed with the work to be performed under this 'Contract' and each and every part and details thereof, in the best and most skilled workman like manner by engaging qualified, careful and efficient workers, and do several parts thereof, at such time and in such order as the Purchaser /Owner may direct, and finish such work in strict conformity with the plans, drawings and/or specifications, and any changes, modifications or amplifications thereof made by the Purchaser /Owner.
- 1.4 The Contractor shall not sell, assign, mortgage, hypothecate, divert or remove equipment or materials which have been installed or which may be necessary for the completion of the 'Contract' without the written consent of the Purchaser /Owner.

**1.5 SCOPE OF CONTRACT**

The specifications of the Contract and the accompanying drawings are intended to describe and provide for a finished piece of work. It is to be understood and agreed by Contractor, that the work described shall be complete in every detail, even though every item necessarily involved is not particularly mentioned. Contractor shall be required to provide all labour, materials and

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equipment necessary for the entire completion of the work described and shall not avail himself of any manifesting unintentional error, omission or inconsistency that may exist. Contractor shall carry out and complete the work in every respect in accordance with the Contract and to the satisfaction of Purchaser /Owner and the manufacturer's representatives, where owner has provided services.

**2.0 REGULATION OF LOCAL AUTHORITIES AND STATUTES:**

- 2.1 The Contractor shall ensure compliance with all statutes laws, rules and regulations of the Central or State Government or any other authority such as the Workmen's Compensation Act 1923, Payment of Wages Act, Minimum Wages Act 1948, Employees State Insurance Act, Employees Provident Fund Act, etc., and any and all statutory bodies concerned.
- 2.2 Modifications thereof in connection with employees engaged by him or his Sub-vendors in the work. The offer shall be presumed to include financial liabilities arising from the above and the Purchaser /Owner shall not be liable for any extra costs on this account.
- 2.3 The Contractor shall conform to the provisions of **Indian Boiler Regulation, Factory Laws, Indian Electricity Act** and rules made there under, and any other acts of legislature relating to the work and to the regulations and byelaws of any authority and of any matter, lighting and other companies and/or authorities with whose systems the plant/structure proposed to be connected and shall, before making variations from the drawings or specifications may be necessitated by so conforming, give to Purchase/owner written notice, specifying the variations proposed to be made and the reason for making it and apply for instructions thereof.
- 2.4 The Contractor shall arrange to give all notices required by the said Acts, Regulations or Byelaws to be given to any Authority or to any Public Officer and pay all fees that may be properly chargeable in respect of the 'Works' and lodge the receipts with the Purchaser/ OWNER, unless otherwise specified. Obtaining all permits and licenses required thereupon shall be the responsibility of the Contractor.
- 2.5 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 the provisions of the statutory laws and its amendments from time to time during erection in respect of the plant and equipment ultimately to be owned by the Purchaser /Owner shall be to the account of the Purchaser / Owner. Should any such inspection or registration need to be re arranged due to the fault of the Contractor or his Sub-Vendor, the

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additional fees for such inspection and/or registration shall be borne by the Contractor.

**3.0 PRICE FOR ERECTION:**

The Bidder/Contractor shall consider all such costs as to account for payment of wages as per relevant statutes applicable in quoting percentage excess/on par/less on ECV and shall not raise any extra claim on that account.

**4.0 OWNER'S LIEN ON EQUIPMENT:**

The Purchaser /Owner shall have lien on all equipment including those of the Contractor brought to the 'Site' for the purposes of erection, testing and commissioning of the plant. The Purchaser /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 OWNER.

**5.0 INSPECTION, TESTING AND INSPECTION CERTIFICATES**

- 5.1 The provisions of the clauses entitled Inspection, Testing and Inspection Certificates shall also be applicable to the erection portion of the Works'. The OWNER shall have the right to re-inspect any equipment though previously inspected and approved by him, at the Contractor's works, before and after the same are erected at 'Site'. If by the above inspection, the Purchaser /Owner rejects any equipment, the Contractor shall make good for such rejections either by replacement or by modifications/repairs as may be necessary to the satisfaction of the Purchaser /Owner. Such replacements will also include the replacements or re execution of such of those works of other Contractors and/or agencies, which might have been damaged or affected by the replacements or rework done to the Contractor's work.
- 5.2 The Contractor shall correct any work that proves faulty immediately. The fact that the Purchaser /Owner or their representatives have not pointed out faulty work or work which is not in accordance with plans and specifications shall not relieve the Contractor from correcting such work when and as directed by the Purchaser /Owner without additional compensation.
- 5.3 When owner takes down any item of finished work for the purpose of inspection, the Contractor shall bear the entire expenses incident there to. However, no extension of time shall be given for completion of works on this account. If the Contractor shall fail to repair any defective work or replace any defective materials after reasonable notice, the Purchaser /Owner may cause such

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defective work to be repaired or defective materials to be replaced by other agencies and the expenses thereof shall be deducted from the amount to be paid to the Contractor

- 5.4 The Purchaser /Owner, their representatives and employees shall, at all reasonable times, have free access to the works and/or to the workshops, factories or other places where materials are being prepared or constructed for the 'Contract' and also to any place where the materials are lying or from where they are being obtained, and the Contractor shall give every facility to the Purchaser /Owner and his representatives for inspection and examination and test of the materials and workmanship even to the extent of discontinuing portions of the work temporarily, or of uncovering or taking down portions of finished work.

**6.0 ACCESS TO SITE AND WORKS ON SITE:**

- 6.1 Suitable access to and possession of the 'Site' shall be afforded to the Contractor by the OWNER in reasonable time.
- 6.2 The work as far as it is carried out on the Owner's premises, shall be carried out when the Owner may approve.
- 6.3 In the execution of the Works, no persons 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.
- 6.4 Access to the 'Site' at all times shall be accorded to the Purchaser /Owner and other authorized officials and statutory Public Authorities. Nevertheless, the Contractor shall not object to the execution of the work by other Contractors or tradesmen whose names shall have been previously communicated in writing to the Contractor by the Purchaser /Owner and afford them every facility for the execution of their several functions simultaneously with his expenses.

**7.0 CONTRACTOR'S SITE OFFICE ESTABLISHMENT:**

- 7.1 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 Purchaser /Owner or his duly authorized representative shall be communicated to the authorized representative of the Contractor at the Site Office and the same shall be deemed to have been

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communicated to the Contractor at his legal address. A complete set of specifications, drawings and a copy of the Contract agreement shall be kept in the site office at all times.

- 7.2 The Contractor shall employ at least one competent representative whose name or names shall have previously been communicated in writing to Purchaser /Owner by the Contractor, to supervise the erection of the plant and to carry out the works. The said representative or if more than one shall be employed, then one of such representatives shall be present at the site during working hours, and any written orders or instructions which the Purchaser /Owner may give to the said representatives of the Contractor shall be deemed to have been given to the Contractor. It is essential that the supervisory personnel shall be capable of speaking and writing in English language.
- 7.3 When Contractor or his representative is not present on any part of the work where it may be desired to give directions in the event of emergencies, orders may be given by owner and shall be received and obeyed by the supervisors or foremen who may have charge of the particular part of the working reference to which orders are given. If requested to do so, owner shall confirm such orders in writing. Any such instructions, directions or notices given by owner shall be deemed to have been given to Contractor.
- 8.0 **COOPERATION WITH OTHER CONTRACTORS.**
- 8.1 The Contractor shall cooperate 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 Contractors shall also so arrange to perform his work as to minimize, to the maximum extent possible, interference with the work of other Contractors and his workers. Any /or 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 his own expense. The Engineer shall determine the resolution of any difference or conflict that may arise between the Contractor and other Contractors or between the Contractor and the workers of the Owner concerning their work. If the Works of the Contractor is delayed because of any acts or omissions of another Contractor, the Contractor shall have no claim against the Owner on that account other than an extension of time for completing his Works. However, extension of time will be considered after execution of its merits and at the discretion of the Purchaser/Owner.

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- 8.2 The Purchaser /Owner shall be notified promptly by the Contractor, of any defects in the other Contractor's works that could affect the Contractor's 'Works'. The Purchaser /Owner shall determine the corrective measures, if any, required to rectify this situation after inspection of the 'Works' and such decisions by the Purchaser /Owner shall be binding on the Contractor. If any part of the Contractor's work depends, for proper execution, upon the work of any other Contractor, the Contractor shall inspect and promptly report in writing to the Purchaser /Owner any defect in such work of other Contractors that may render it unsuitable for proper execution of the work under this 'Contract'. His failure to so inspect and report shall constitute an acceptance of 'others' work as fit and proper for the reception of his work, except as to defects which may develop in the work of 'OTHERS' after the proper execution of the work, the Contractor shall inspect work already in place and shall at once report to the Purchaser /Owner any discrepancy between the executed work and the drawings.
- 8.3 The Contractor shall be responsible to ensure that all embodiments relating to the equipment are in position before releasing for concreting.

**9.0 DISCIPLINE OF WORKMEN:**

- 9.1 The Contractor shall adhere to the disciplinary procedure set by the Purchaser /Owner in respect of his employees and the workers at 'Site'. The Purchaser /Owner 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 Purchaser /Owner such employee has misconduct himself or be 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 at his own expense.

**10.0 CONTRACTOR'S FIELD OPERATION:**

- 10.1 The Contractor shall workout and furnish PERT 'Network schedule along with detailed activity schedule indicating the progress and schedule completion dates of various activities and shall work to this mutually agreed schedule. The schedule shall show approximately the date on which each part or division of the work is expected to begin, based on knowledge of the works of other Contractors and the date when the work is scheduled to be finished. Upon the request of owner, Contractor should be prepared to discuss his schedule in relation to the master schedule and shall coordinate his work with that of the other Contractors as determined by owner.

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- 10.2 The Contractor shall keep the Purchaser /Owner 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 OWNER shall not relieve the Contractor of any of his responsibility towards the field activities. Such reviews shall also not be considered as an assumption of any risk or liability by the Purchaser /Owner or any of his representatives and no claim of the Contractor will be entertained because of the failure or in efficiency of any such plan or schedule or method of work reviewed. The Contractor shall be solely responsible for the safety, adequate and efficiency of plant and equipment and his erection methods.
- 10.3 The Contractor shall have the complete responsibility for the conditions of the work site including the safety of all persons employed by him and/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 his 'Contract' and shall not be limited to normal working hours. The construction review by the Purchaser /Owner is not intended to include review of the Contractor's safety measures, in or near the worksite, and their adequacy or otherwise.
- 10.4 The work so far as it is carried out on the Owner's premises shall be carried out at such time as the Purchaser /Owner may approve consistent with the construction schedule and so as not to interfere unnecessarily with the conduct of the Owner's business and the Purchaser /Owner will give the Contractor all reasonable facilities for carrying out the work.
- 11.0 PHOTOGRAPHS AND PROGRESS REPORT:**
- 11.1 The Contractor shall furnish duly certified the progress/ status reports in respect of the material/ equipment received at site, the works carried out and the status of drawings for every 15 days.
- 11.2 Contractor shall also provide copies of photographs along with progress reports including soft copy whenever requested by TSTRANSCO as a record of significant events of progress.
- 11.3 Contractor shall furnish three (3) prints to the PURCHASER/ENGINEER of progress photographs of the work done at 'Site'. Photographs shall be taken when and where indicated by the PURCHASER/ENGINEER 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. Normally photographs may be taken once every 15 days



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and for all special events.

The above photographs shall accompany the fortnight/ 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. The Contractor shall furnish progress reports as and when requested by the PURCHASER/ ENGINEER. Photographs shall be taken by the Contractor at all important stages.

*Photographs shall be taken by the Contractor for each tower location of EHT lines in the following stages of*

1. *After excavation is over in normal soils.*
2. *Before and after blasting in Hard rock soils.*
3. *During dewatering.*
4. *During concreting.*
5. *Shoring & strutting.*

**For Substations:**

*At all important stages like leveling, foundations, laying of slab etc. before and after blasting in hardrock soils and stack photographs.*

*Note: The photographs should be clear and hard copy or soft copy (2 Nos) shall be submitted to the Engineer in charge immediately.*

**12.0 MANPOWER REPORT:**

12.1 ERECTION STAFF: The Contractor shall furnish a list of all the Engineering, skilled, semi skilled personnel and unskilled labour along with the supervisory staff with their experience, who would be employed by him, for carrying out this specific installation, testing and commissioning work. Bidder shall also indicate the names, qualifications, experience of supervisory staff proposed to be stationed at site until the completion of work as indicated in Qualifying Requirements. The Contractor shall assign only qualified and senior supervisor Engineers and provide adequate no. of competent labour for job.

12.1 The Contractor shall submit to the Purchaser /Owner on the first day of every month, a man-hour schedule for the next month, detailing the man-hours scheduled for the month, skill wise and area wise.

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- 12.2 The Contractor shall also submit to the Purchaser /Owner on the first day of every month, a manpower 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.

**EMPLOYMENT OF TECHNICAL STAFF FOR SUPERVISION, SKILLED AND UNSKILLED LABOUR:**

The Contractor shall provide experienced, technically qualified supervising Engineers for the supervision. The Chief Supervising Engineer of the Contractor or his agent shall have full power as the representatives of the Contractor who can negotiate at site in regard to execution of the Contract. The minimum qualification of site Engineer is a degree in Engineering. The Contractor must make his own arrangements for recruiting skilled, semi- skilled and un-skilled labour in sufficient numbers. The Contractor shall engage only competent skilled workers. The Executive Engineer/ In-charge of the work will have the right to remove any skilled worker employed by the Contractor, if found not suitable.

The Contractor shall employ at least the following Technical Staff indicated against each work.

Project Manager	2 Nos.	Graduate Engineer (Elec.) – 1 No. Graduate Engineer (Civil) – 1 Nos.
Planning Engineer	2 Nos.	Graduate Engineer (Elec.) – 1 No. Graduate Engineer (Civil) – 1 No.
Section In-charge	2 Nos.	Graduate Engineer (Elec.) – 1 No. Graduate Engineer (Civil) – 1 No.
Site Engineers	2 Nos.	Graduate Engineer (Elec.) – 1 No. Graduate Engineer (Civil) – 1 No.
Supervisors	3 Nos.	Electrical Diploma holders (1 No.)+
		Diploma Civil (2 Nos.)

The Contractor shall have one of the above technical staff as a project manager with five year's experience in executing such Contract of comparable nature.

In case of failure of the Contractor to employ technical staff during execution as above, recovery

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shall be made from his bills at Rs. 10,000/- per month for each work, besides other penal action.

The Contractor shall make his own arrangements for engagement of all labour, local or otherwise, their transportation, housing, feeding and payment thereof, in accordance with labour law, unless the Contract otherwise provides. No idle labour payment will be made to the Contractor.

**13.0 PROTECTION OF WORK:**

- 13.1 The CONTRACTOR shall have total responsibility for protecting his 'Works until it is finally accepted by the Purchaser /Owner. No claim will be entertained by the OWNER for any damage or loss to the Contractor's works and the Contractor shall be responsible for the complete restoration of the damaged 'Works' to its original condition to comply with the specifications and drawings. Should any such damage to the Contractor's 'Works' occur because of other party not under his claim directly with the party concerned. If disagreement, conflict, or dispute develops between the Contractor's 'Works', the same shall be resolved as per the provisions of the Clause entitled 'Cooperation with other Contractors'. The Contractor shall not cause any delay in the resolution of such disputes. The Contractor shall proceed to repair the work immediately and no cause thereof will be assigned pending resolution of such dispute.
- 13.2 During construction of the project, the Purchaser /Owner will continue to operate the plant and equipment already put in service. The Contractor shall protect all such plant, structures, piping, conduits, equipment and facilities against damage during the operations.
- 13.3 The Contractor shall perform his work in a manner that in no way endangers the operations of the existing steam and electric and other plants of the Purchaser /Owner which will have interconnections with the new plant in the construction of which the Contractor is engaged. In all cases where connections to existing plant and equipment occur, such connections shall be made only with specific and advance instructions and authorization from and issued by the Purchaser /Owner.
- 13.4 The Contractor and his Sub-Contractors shall be responsible during work for protection of the work, which has been completed by OTHERS. Necessary care shall be taken to see that their own men cause no damage to the same during the course of execution of the work.
- 13.5 All other work completed or in progress as well as machinery and equipment that are liable, to be damaged by the Contractor's work shall be protected by the Contractor and such protection shall

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remain and be maintained until its removal is directed by the OWNER.

- 13.6 The Contractor shall effectively protect all the works from action of weather and from penalty or defacement and shall cover finished parts where required for their thorough protection. Face work shall be perfectly clean and free from defects.
- 13.7 The work shall be carried out onto completion without damage to any work and property adjacent to the area of his work, to whom so ever it may belong, without interference with the operation of their existing machines or equipment.
- 13.8 The Contractor shall make available necessary temporary roadways, footways, guards as may be rendered necessary by reason of his work, for the protection and accommodation of foot passengers or other traffic of the Purchaser /Owner or occupier of adjacent property and of public. The Contractor shall at all times provide sufficient temporary barriers, notice boards and lights to protect and warn the public and post necessary watchmen to guard the 'Site' and equipment. He shall take all precautions necessary and shall be responsible for the safety of the work to be performed by him. The Contractor shall also observe and display 'Safety First' signs and shall have proper safety and fire protection equipment.
- 13.9 Adequate lighting at and near all the storage, handling, fabrication, pre assembly and erection sites for properly carrying out the work and for safety and security shall be provided by the Contractor. The Contractor's work area should be adequately illuminated during night time also. The Contractor should also engage adequate electricians/wiremen, helpers, etc., to carry out and maintain these lighting facilities. If the Contractor fails to provide all the above listed facilities, the Purchaser /Owner may provide such facilities as he may deem necessary and charge the cost thereof to the Contractor. In any case, the Contractor shall be liable for all penalty and consequences arising out of his neglect in this regard.
- 14.0 **EMPLOYMENT OF LABOUR:**
- 14.1 The Contractor is expected to employ on the work only his regular skilled and trusted employees with experience in similar kind of work. No female labour shall be employed after darkness. No person below the age of eighteen years shall be employed.
- 14.2 The Contractor shall also furnish details of the qualifications and experience of his senior supervisors and Engineers assigned to the work, including their experience in supervising erection

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and commissioning of plant and equipment of comparable capacity.

- 14.3 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.
- 14.4 The hours of work on the 'Site' shall be decided by the OWNER and the Contractor shall adhere to it. Working hours will normally be eight (8) hours per day (Monday to Saturday).
- 14.5 The Contractor's employees shall wear identification badges while on work at 'Site'.
- 14.6 The Contractor shall ensure that he pays his men regularly their wages, overtime and other compensations. The Contractor shall also furnish the Purchaser /Owner at fortnightly intervals a certificate that he has paid all the dues to his workers. In case such payments are not made regularly by the Contractor, the OWNER will be in his right to make such payments and deduct the same from the payments due to the Contractor.
- 14.7 In case the Purchaser /Owner becomes liable to pay any wages or dues to the labourer or to any Government agency under any of the provisions of the Minimum Wages Act, Workmen's Compensation Act or any other law due to act of omission of the Contractor, the OWNER may make such payments and shall recover the same from the Contractor's bills.
- 14.8 None of the Contractor's superintendents, supervisors, Engineers or labour may be withdrawn from the work without due notice being given to the Purchaser /Owner. Further, no such withdrawal shall be made if, in the opinion of the Purchaser /Owner, it will jeopardize the required pace of progress and/or the successful completion of the work.
- 14.9 In connection with the performance of work under this 'Contract', the Contractor shall agree not to discriminate based on race, religion, colour, nationality or origin. It is also expected that the Contractor in his selection of personnel will give due regard to their ability to cooperate with the Purchaser /Owner and the manufacturer's erection supervisor's suggestions and the recommendations made by the Purchaser /Owner and the MANUFACTURER'S supervisors relating to the work and coordination thereof are to be carefully and courteously considered for implementation.
- 14.10 Contractor's employees shall be provided with identification badges showing employee's pay roll

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number, Contractor's name and project identification. All employees will be required to wear these badges during the time they are at project site, where these would be plainly visible to owner's watchmen and security staff. All workers, watchmen, supervisors, Engineers and other staff at work site shall be provided with safety helmets by Contractor and these shall be worn by them all the time they are at work site. Employees failing to do so shall, upon request of owner, be summarily discharged. No employee of Contractor shall be permitted to enter areas of construction/operation unauthorized.

- 14.11 Owner shall be at liberty to object to any representative or person or skilled, semiskilled or unskilled worker employed by Contractor in the execution, or otherwise, of the work, who shall misconduct himself, or be incompetent, or negligent or unsuitable and Contractor shall remove the person so objected to, upon receipt of notice in writing from owner requiring him to do so and shall provide in his place a competent representative at his own expense within reasonable time. Such persons who had been removed from the site at the request of owner shall not be again employed or allowed on the works without the permission of owner.

**15.0 FACILITIES TO BE PROVIDED BY THE OWNER FOR SUBSTATION:**

**15.1 SPACE:**

The Contractor shall advise the Purchaser /Owner within thirty (30) days from the date of acceptance of the 'Letter of Intent' about his exact requirement of space for his office, storage area, pre assembly and fabrication areas, toilets, etc. The above requirement shall be reviewed by the Purchaser /Owner and space will be allotted to the Contractor for construction of his temporary structures like office, storage sheds, and other utilities, etc., for his own as well as his Sub-Contractor's use. The space allotted shall be within a distance of about 1.0km from the 'Site'. No space will be provided by the Purchaser /Owner for the Contractor's labour and facilities for labour housing shall be the sole responsibility of the Contractor.

The Contractor shall erect all temporary buildings, tool sheds, fabrication shops, stores and office, etc. at his own cost in the area allotted to him at work site by the owner. Contractor shall obtain owner's approval before removal of such temporary buildings. The Contractor shall indicate the area required for storage facilities inside the work site. The Contractor shall at all times keep the site free from accumulation of waste and debris and on completion of work dispose of all the surplus materials and temporary works, as directed by the owner and leave the works and site

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clean and tidy. The Contractor shall be responsible for taking all the safety precautions during construction and maintaining the site safe at all times. At the end of each working day and at all times, when the work is temporarily suspended he shall protect all the construction material, equipment and facilities from penalty.

**15.2 ELECTRICITY:**

The Contractor shall submit to the Purchaser /Owner within thirty (30) days from the date of acceptance of the 'Letter of Intent', his phased electrical power requirements to allow the planning of the temporary electrical distribution by the Purchaser /Owner. The Contractor shall be provided with construction power for the purposes of the 'Contract', at one point in the project 'Site' which shall be metered and chargeable to Contractor. The Contractor shall make his own further distribution arrangement. All temporary wiring must comply with local regulations and will be subject to the Purchaser /Owner's inspection and approval before connection to supply. Power supplied to Contractor's office, Contractor's works and Contractors residential colony will be charged at the rates in vogue at that time. The Contractor's temporary distribution shall be arranged so as to maintain a Power Factor of 0.8 minimum under all operating conditions.

The owner will not be responsible for the consequences of any unintentional or unplanned interruptions to the above power supply. However, in case of power failure or due to any unavoidable circumstances, the Contractor has to make necessary arrangements like diesel generator sets etc. so as not to affect the progress of work. The Contractor shall make his own arrangement for the dismantling on completion of the works of his temporary distribution systems, distribution panel and other equipment he may require to take power from owner's supply point.

**15.3 WATER:**

Water supply by the Owner will be on chargeable basis. Supply of water, if available, will be made for the construction purposes at an agreed single point in the 'Site'. Any further distribution will be the responsibility of the Contractor. Drinking water will also be provided at one agreed single point in the 'Site', if available.

**15.4 CONSTRUCTION TOOLS AND EQUIPMENT AND OTHER MATERIALS:**

15.4.1 Except in case where the Owner's express permission is applied for and received in writing, no use of the Owner's plant facilities such as cranes, passenger elevator or machine shop shall be made by the Contractor or his employees.

15.4.2 The Purchaser /Owner shall not be responsible or held liable for any damage to person or property consequent upon the use, misuse or failure of any construction tools and equipment used by the Contractor or any of his Sub-Contractors, even though such construction tools and equipment may be furnished, rented or loaned to the Contractor or any of his Sub-Contractors. The acceptance and/or use of any such construction tools and equipment by the Contractor or his Sub-Contractors shall be construed to mean that the Contractor accepts all responsibility for and agrees to indemnify and save harmless the OWNER from any and all claims for said penalty resulting from said use, misuse or failure of such construction tools and equipment.

**16.0 FACILITIES TO BE PROVIDED BY THE CONTRACTOR:****16.1 TOOLS, TACKLES AND SCAFFOLDINGS:**

16.1.1 The Contractor shall provide at his own expense, all the construction equipment, false work, erection tools, machine tools, power tools, tackles, hoists, cranes, derricks, cables, slings, skids, scaffolding, work benches, tools for rigging, cribbing and blocking, welding machines, preheating and stress relieving equipment, X-ray and all associated protection equipment, instruments, appliances, materials and supplies required for unloading, transporting, storing, erection, testing and commissioning that may be required to accomplish the work under the 'Contract' unless otherwise to final determination of the Purchaser /Owner. He shall submit a list of all such materials to the OWNER 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 Purchaser /Owner.

16.1.2 The Contractor shall also furnish all necessary expandable devices like anchors, grinding and abrasive wheels, raw plugs, hacksaw blades, taps, dies, drills, reamers, chisels, files, stones, oil stones, wire brushes, necessary scaffolding, ladders, wooden planks, timbers, sleepers and consumable materials like oxygen, acetylene, argon, lubricating oils, greases, cleaning fluids, cylinder oil, graphite powder and flakes, fasteners, gaskets, temporary supports, stainless steel



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shims of various thickness as required, cotton waste, cheese cloth and all other miscellaneous supplies of every kind required for carrying out the works under the Contract.

16.1.3 The Contractor shall provide all reasonable facilities including tools, personnel etc., and ensure coordination with the OWNER and the Manufacturer's erection supervisors to enable them to carry out all supervision, measurements, checks, etc., in a satisfactory manner.

16.1.4 The Contractor shall not dispose of, transport or withdraw any tools, tackles, equipment and material Provided by him for the 'Contract' without taking prior written approval from the Purchaser /Owner, and the Purchaser /Owner at all times shall have right to refuse permission for disposal, transport or withdrawal of tools, tackles, equipment and material, if in his opinion, the same will adversely affect the efficient and expeditious completion the 'Project'.

16.1.5 The Contractor shall also arrange for storing of materials with weather protection wherever necessary and proper security arrangement till the installation is taken over by the Purchaser.

16.1.6 Mobile crane, if required for erection, shall have to be arranged by Contractor.

16.2 COMMUNICATION: The Contractor will make his own arrangement for his communication needs such as telephone, telex, etc., at his Site Office. The OWNER will assist the Contractor in getting the above facilities, in case he finds any difficulties. The owner may install one telephone connection to the Contractor from the exchange if any provided at the site for internal communication.

16.3 FIRSTAID:

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

16.3.2 The Owner will assist the Contractor, in case of an emergency, in obtaining the services of an ambulance for transportation to the nearest hospital.

16.4 CLEANLINESS :

16.4.1 The Contractor shall be responsible for keeping the entire area allotted to him clean and free from

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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 OWNER. Materials and stores shall be so arranged as 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.

16.4.2 Similarly, the offices of the Contractor shall be kept clean and neat to the entire satisfaction of the Purchaser /Owner. Proper sanitary arrangements shall be provided by the Contractor, in the work areas and office of the Contractor and residential colonies.

16.4.3 If Contractor fails to comply with these requirements in spite of instructions from the Purchaser, the areas will be cleaned by Purchaser at Contractor's cost and the cost of the same will be deducted from the Contractor's due amounts.

**17.0 LINES AND GRADES:**

17.1 All the 'Works' shall be performed to the lines, grades and elevations indicated on the drawings. The Contractor shall be responsible to locate and layout the 'Works'. Basic horizontal and vertical control points will be established and marked by the Purchaser /Owner at 'Site' at suitable points. These points shall be used as datum for the 'Works' under the Contractor. The Contractor shall inform the Purchaser /Owner 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 Purchaser /Owner to enable the Contractor to proceed with his 'Works'. Any work done without being properly located may be removed and/or dismantled by the Purchaser /Owner at Contractor's expense.

17.2 Where the Purchaser /Owner had already established the base lines and benchmarks adjacent to the various sections of work, the same must be carefully preserved by the Contractor, and in case of their unnecessary destruction by him or any of his employees, these will be reestablished by the Purchaser /Owner at the Contractor's expenses.

17.3 The Contractor shall be responsible for the accuracy of all dimensions within the various sections of the work according to the figures of dimensions in the drawings.

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- 17.4 Contractor shall supply, fix and maintain at his cost during the execution of any work, all the necessary centering, scaffolding, staging, planking, timbering, strutting, shoring, pumping, fencing, hoarding, guarding and lighting by night as well as by day, required not only for the proper execution and protection of the said work, but also for the protection of the pumping and the safety of any adjacent roads, streets, cellars, vaults, ovens, walls, houses, buildings and all other erections, matters or things. Contractor shall take out and remove any or all such centering, scaffolding, staging, planking, timbering, strutting shoring, etc. as occasion shall require or when ordered to do so and shall fully reinstate and make good all matters and things disturbed during execution of the work, to the satisfaction of owner. Contractor shall be paid no additional amount for the above and for access roads to be made to reach the construction site.
- 18.0 FIRE PROTECTION:**
- 18.1 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 canvas paper, plastic or other inflammable flexible materials shall not at all be used at 'Site' for any other purposes 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 area or storage.
- 18.2 Similarly, corrugated paper fabricated cartons, etc., will 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 fire resulting from welding sparks, cutting flames and other similar fire sources.
- 18.3 All the Contractor's supervisory personnel and sufficient number of workers shall be trained for firefighting and shall be assigned specific fire protection duties. Adequate number of such trained personnel must be available at the 'Site' during the entire period of the 'Contract'.
- 18.4 The Contractor shall provide and maintain fire protection equipment, adequate in design and numbers for the warehouses, office, temporary structures, etc. Access to such fire protection equipment shall be easy and kept open at all times. The compliance of the above requirements

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under fire protection shall in no way relieve the Contractor of any of his responsibilities and liabilities due to fire accidents occurring either to his materials and equipment or to those of others working in the area.

**19.0 SECURITY (WATCH & WARD) :**

The Contractor shall have total responsibility for all equipment and materials in his custody stored, 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 damage and loss. All materials of the Contractor shall enter and leave the project 'Site' only with the written permission of the OWNER in the prescribed manner.

**20.0 CONTRACTOR'S AREA LIMITS:**

The Purchaser /Owner will 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 moves 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 Purchaser /Owner.

**21.0 CONTRACTOR'S COOPERATION WITH THE OWNER**

- 21.1 In cases where the performance of the erection work by the Contractor affects the operation of the system facilities of the Purchaser /Owner, such erection work of the Contractor shall be scheduled to be performed only in the manner stipulated to be performed by the Purchaser /Owner and the same shall be acceptable at all times to the Purchaser /Owner. The Purchaser /Owner may impose such restrictions on the facilities provided to the Contractor such as electricity, water etc., as he may think fit and the Contractor shall strictly adhere to such restrictions and cooperate with the Purchaser /Owner. It will be the responsibility of the Contractor to provide all necessary temporary instrumentation and other measuring devices required during startup 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

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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 these documents.

21.2 The Contractor at all times shall work in coordination with the Purchaser /Owner's staff and offer them all reasonable facilities to become familiar with the erection, operation and maintenance of the equipment.

21.3 In respect of observations of local rules, administrative orders, working hours and the like, the Contractor and his personnel shall cooperate with the Purchaser /Owner.

**22.0 COMMISSIONING:**

The 'Commissioning' of the equipment/Material erected by the Contractor shall be the responsibility of the Contractor. The Contractor shall provide in addition, test instruments, calibrating devices, etc., and the labour required for the successful performance of these tests. If it is anticipated that the above tests may prolong for a long time, the Contractor's or his sub-vendor's workmen required for the above tests shall always be present at 'Site' during such tests.

**23.0 MATERIALS HANDLING AND STORAGE:**

23.1 All the equipment furnished under the Contract and arriving at Stores/Site shall be promptly received, unloaded, transported and stored in the storage space by the Contractor. It is Contractor's sole responsibility to keep in touch with Purchaser /Owner, and others to inform himself of the expected date and time of arrival of the carriers at site and ensure that his men and aids are available in time to unload the material/equipment and promptly release the carriers. Contractor shall plan in advance his requirements of jacks, cranes, sleepers etc., required to unload the material/equipment promptly and efficiently.

23.2 The Contractor shall be responsible for examining all the shipments and notify the Purchaser /Owner immediately of any damage, shortage, discrepancy etc., for the purpose of Purchaser /Owner's information only. The Contractor shall submit to the Purchaser /Owner every week a report detailing all the receipts during the week. However, the Contractor shall be solely responsible for any shortages or damage in transit, handling and/or in storage and erection of the equipment at the 'Site'. Any demurrage, wharfage and other such charges claimed by the

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transporters, railways, etc., shall be to the account of the Contractor.

- 23.3 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 of the Purchaser /Owner at any time. The schedule shall show approximately the date on which each part or division of the work is expected to begin, based on his knowledge of the works of other Contractors and the date when the work is scheduled to be finished. Upon the request of owner, Contractor should be prepared to discuss his schedule in relation to the master schedule and shall coordinate his work with that of the other Contractors as determined by owner.
- 23.4 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 Purchaser /Owner. 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 for such equipment at 'Site'.
- 23.5 The instructions of the manufacturers for storage and the conservation during storage shall be followed. 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. Heavy rotating parts in assembled conditions shall be periodically rotated to prevent corrosion due to prolonged storage.
- 23.6 All the electrical equipment **such as motors, Transformers and reactors**, 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 record shall be open for inspection by the Purchaser /Owner.
- 23.7 The Contractor shall ensure that all the packing materials, and protection devices used for various equipment during transit and storage are removed before the equipment are installed. All packing materials like wooden planks, wooden crates of insulators should be returned to TSTRANSCO.
- 23.8 The consumables and other supplies likely to deteriorate due to storage must be thoroughly

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protected and stored in a suitable manner to prevent damage to deterioration in quality by storage.

- 23.9 All the materials stored in the open or dusty location must be covered with suitable weatherproof and flame proof covering material where ever applicable.
- 23.10 If the materials belonging to the Contractor are stored in area other than those earmarked for him, the Purchaser /Owner will have the right to get it moved to the area earmarked for the Contractor at the Contractor's cost.
- 23.11 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 gears, generators, exciters and consumables like electrodes, lubricants, etc, shall be stored in the closed storage space. The Purchaser /Owner, in addition, may direct the Contractor to move certain other materials, which in his opinion will require indoor storage, to indoor storage areas which the Contractor shall strictly comply with.
- 23.12 The Contractor shall arrange for periodical inspection of material/equipment in his custody until taken over by the Purchaser /Owner and shall carryout all protective and preservative measures required thereupon.
- 23.13 The Contractor shall also keep a check on the deliveries of the equipment/material covered in his scope of erection and for those falling in the scope of supply by the Purchaser, shall advise the Purchaser /Owner well in advance regarding possible holdups in his work due to expected delays in delivery of equipment, to enable the Purchaser /Owner to expedite the deliveries. The Contractor shall also inform the Purchaser /Owner in right time regarding the repairs/replacement required towards the items damaged/lost in order to enable the Purchaser /Owner to arrange for repairs/replacements well in time and avoid delays due to non availability of requirement and parts.

**24.0 CONSTRUCTION MANAGEMENT:**

- 24.1 The field activities of the Contractor working at 'Site' will be coordinated by the Purchaser /Owner and the Purchaser /Owner's decision shall be final in resolving any disputes or conflicts between the Contractor and other Contractors and tradesmen of the Purchaser /Owner regarding scheduling and coordination of work. Such decision by the Purchaser /Owner shall not be a cause for extra compensation or extension of time for the Contractor.

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24.2 The Purchaser /Owner shall hold weekly meeting of all the Contractors working at 'Site', at a time and a place to be designated by the Purchaser /Owner. The Contractor shall attend such meetings and take notes of discussions during the meeting and the decisions of the Purchaser /Owner and shall strictly adhere to those decisions in performing his 'Works'. In addition to the above weekly meetings, the Purchaser /Owner may call for other meetings either with individual Contractors or with selected number of Contractors and in such a case the Contractor, will also attend such meetings.

24.3 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 action in writing to the OWNER satisfying that his action will compensate for the delay. The Contractor shall not be allowed any extra compensation for such action.

25.0 **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 Purchaser /Owner in required number of copies. A record of all readings taken during the alignment of the equipment shall be maintained by the Contractor. This shall be signed by the Manufacturer's erection supervisor and/or the Purchaser /Owner as a token of their acceptance of the same. All such records shall be handed over to the Purchaser /Owner on completion of the 'Works'.

26.0 **CONTRACTOR'S MATERIALS BROUGHT ON TO SITE:**



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- 26.1 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 Purchaser /Owner. All such goods shall, from the time of their being brought vest in Purchaser /Owner, 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 Purchaser /Owner. But the Contractor shall nevertheless be solely liable and responsible for any loss or destruction thereof and damage thereto.
- 26.2 The OWNER shall have a lien on such goods for any sum or sums which may at any time be due or owing to him by the Contractor, under, in respect of or by reasons of the 'Contract'. After giving a fifteen (15) days' notice in writing of his intention to do so, the Purchaser /Owner shall be at liberty to sell and dispose of any such goods, in such manner as he shall think fit including public auction or private treaty and to apply the proceeds in or towards the satisfaction of such sum or sums due as aforesaid.
- 26.3 After completion of the 'Works', the Contractor shall remove from the 'Site' under the direction of the Purchaser /Owner the materials such as construction equipment, erection tools and tackles, scaffolding, etc. with the written permission of the Purchaser /Owner. If the Contractor fails to remove such materials, within fifteen (15) days of issue of a notice by the Purchaser /Owner to do so, then the Purchaser /Owner shall have the liberty to dispose of such materials as detailed under Clause 26.2 above and credit/debit the proceeds there to the account of the Contract.
- 27.0 PROTECTION OF PROPERTY AND CONTRACTOR'S LIABILITY:**
- 27.1 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 the Purchaser /Owner and the employees of other Contractors and Sub-vendors and all public and private property including structures, buildings, other plants and equipment and utilities either above or below the ground.
- 27.2 The Contractor will ensure provision of necessary safety equipment such as barriers, signboards, warning lights, alarms, etc., to provide adequate protection to persons and property. The Contractor shall be responsible to give reasonable notice to the Purchaser /Owner and the Purchaser /Owner of public or private property and utilities when such property and utilities are likely to get damaged or injured during the performance of his 'Works' and shall make all

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necessary arrangements with such Owners, related to removal and/or replacement or protection of such property and utilities.

27.3 Contractor shall not sell, assign, mortgage, hypothecate or remove equipment or materials which have been installed or which may be necessary for the completion of the Contract without the written consent of owner.

**28.0 PAINTING:** All exposed metal parts of the equipment including piping, structures, railings, etc., after installation, unless otherwise surface protected, shall be first painted with at least one coat of suitable primer which matches the shop primer paint used, after thoroughly cleaning all such parts of all dirt, rust, scales, greases, oils and other foreign materials by wire brushing, scraping or sand blasting, and the same being inspected and approved by the OWNER for painting. Afterwards, the above parts shall be finished with two coats of alloyed resin machinery enamel paints. The quality of the finish paint shall be as per the standards of ISI or equivalent and to be of the colour as approved by the OWNER.

**29.0 INSURANCE : (Clause 10.0 GCC)**

29.1 In addition to the conditions covered under the clause entitled 'Insurance' in 'General Conditions of Contract', the following provisions will apply to the portion of the 'Works' at site to be done at site beyond the Contractor's own or his Sub-Contractor's manufacturing works. Comprehensive Insurance of equipment during erection and commissioning, Workmen's Compensation Insurance, Comprehensive Automobile Insurance & Comprehensive General Liability Insurance shall be the responsibility of the Contractor. Contractor shall at his own expense arrange to effect and maintain until the completion of the Contract. Insurance policies, with an insurance company approved by owner, against all risks in respect of which Contractor is required under this clause to indemnify owner. In particular, Contractor shall effect and maintain an insurance policy of at least Rs.3.00 lacs for one person and Rs.5.00 lacs per accidental for injury or death and at least Rs.5.00 lacs per accident for third party property damage, to indemnify owner against all third party accident/damage claims which may arise in respect of the work or in consequence thereof. The Contractor shall also maintain an insurance policy against all claims which may be made upon owner whether under the Workmen's Compensation Act or any other statute in force during the currency of the Contractor or at common law in respect of any employee of Contractor or any Sub-Contractor. All such insurance policies shall be in the joint names of owner and Contractor and shall be deposited with owner. The Contractor shall be responsible for anything which may be excluded

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from the insurance policies referred to above and also for all other damage to any property or persons out of and incidental to the negligence or defective carrying out of this Contract.

**All costs on account of insurance liabilities covered under the Contract will be on Contractor's account and will be deemed to have been included in the Contract price.**

**29.2 WORKMEN'S COMPENSATION INSURANCE:**

This insurance shall protect the Contractor against all claims applicable under the Workmen's Compensation Act, 1948 (Government of India). This policy shall also cover the Contractor against claims for injury, disability, disease or death of his or his Sub-Contractor's employees, 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 provision

Employee's liability - As per statutory provision.

**29.3 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 Owner's men and damage to the property of others arising from the use of motor vehicles during on or off the 'Site' operations, irrespective of the ownership of such vehicles.

The liability covered shall be as herein indicated:

Fatal injury : Rs.1,00,000 each person  
: Rs.2,00,000 each occurrence

Property damage : Rs.1,00,000 each occurrence

**29.4 COMPREHENSIVE GENERAL LIABILITY INSURANCE:**

29.4.1 This insurance shall protect the Contractor against all claims arising from injuries, disabilities, diseases 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-

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Contractors from riots, strikes and civil commotion. This insurance shall also cover all the liabilities of the Contractor arising out of the clause entitled 'Defense of Suits' under 'General Conditions of Contract'.

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

29.5 The above are only illustrative list of insurance covers normally required and it will be the responsibility of the Contractor 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'.

29.6 FIRE INSURANCE: Unless otherwise instructed by the OWNER, the Contractor shall, on signing the 'Contract', insure the works and keep them insured until the completion of the 'Contract' against loss or damage by fire, with the Company to be approved by the Purchaser /Owner, in the joint names of the Purchaser /Owner and the Contractor for such amount and for any further sum, if called upon to do so by the OWNER, the premium of such further sum being allowed to the Contractor as an authorized extra. Such policy shall cover the property of the Purchaser /Owner only and shall not cover any property of the Contractor or any Sub-Contractor, or his employees. The Contractor shall deposit the policy receipts for the premium with the Purchaser /Owner within twenty-one (21) days from the date of signing the 'Contract' unless otherwise instructed by the Purchaser /Owner. In default of the Contractor insuring as provided above, the Purchaser /Owner may so insure and may deduct the premiums paid from any moneys due, or which may become due to the Contractor. The Contractor shall, as soon as the claim under the policy is settled, or the work reinstated by the insurance office should they elect to do so, proceed with all due diligence with the completion of the 'Works' in the same manner as though the fire had not occurred and in all respects under the same conditions of 'Contract'. The Contractor in case of rebuilding or re installment after fire, shall be entitled to such extension of time for completion as the Purchaser /Owner may deem fit.

**29.7 Comprehensive Transport, Storage, Erection cum Commissioning Insurance:**

29.7.1 All the equipment and materials being supplied by the Contractor (as per Clause No.1.1 of this section) shall be kept completely insured by the Contractor at his cost from the time of dispatch from the Bidders Works, up to the completion of erection, testing and commissioning at site and taking over the equipment by the owner in accordance with the Contract.

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29.7.2 Contractor shall take the delivery at site and jointly with the Purchaser, inspect all the material received at destination store and furnish a loss/damage report to the Purchaser within a week of receipt of material at site and lodge insurance claims there upon. In case of loss to the Purchaser due to delays in submitting the loss/penalty report by Contractor, owner will be within his right to deduct such losses from the Contractor's progressive payments. **All the equipment and materials being supplied by TSTRANSCO shall also to be taken delivery from any of the designated stores of TSTRANSCO/at site and shall be insured by the Contractor against loss, damage, theft, pilferage, fire etc. from the point of unloading up to the time of taking over of equipment by TSTRANSCO including handling, transportation, storage, erection, testing and commissioning etc. and the Contractor shall be fully responsible for making good of any loss or damage at his own cost.** All costs for such insurance shall be to the Contractor account and shall be deemed included in the Contract price.

29.7.3 It will be the responsibility of the Contractor to lodge, pursue and settle all claims with the Insurance Company in case of any damage; loss, theft, pilferage or fire and the owner shall be kept informed about it. The losses, if any, will have to be borne by the Contractor, if the claims are not lodged and pursued properly or in time or if the insurance company does not settle the same. The Contractor shall replace the lost/damaged materials (own and owner supplied) promptly irrespective of the settlement of the claims by the underwriters and ensure that the work progress is as per agreed schedules. The losses, if any, in such replacement will have to be borne by the Contractor.

**30.0 UNFAVOURABLE WORKING CONDITIONS:**

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

**31.0 PROTECTION OF MONUMENTS AND REFERENCE POINTS:**

The Contractor shall ensure that any finds such as relic, antiquity, coins, fossils, etc., which he may

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come across during the course of performance of 'Works' either during excavation or elsewhere are properly protected and handed over to the Purchaser /Owner. Similarly the Contractor shall ensure that the bench marks, reference points, etc., which are marked out either with the help of Purchaser /Owner or by the Purchaser /Owner shall not be disturbed in any way during the performance of his 'Works'. If any work is to be performed which may disturb such references, the same shall be done only after these are transferred to other suitable locations under the direction of the Purchaser /Owner. The Contractor shall provide all necessary materials and assistance for such relocation of reference points, etc.

**32.0 WORK AND SAFETY REGULATIONS:**

- 32.1 The Contractor shall ensure the safety of all the workers, materials and equipment either belonging to him or to others working at 'Site'.
- 32.2 The Contractor will notify the Purchaser /Owner of his intention to bring on to 'Site' any equipment or any container, with liquid or gaseous fuel or other substance that may create hazard. The Purchaser /Owner shall have the right to prescribe the conditions under which such equipment or container maybe handled and used, during the performance of the 'Works' and the Contractor shall strictly adhere to such instructions. The Purchaser /Owner shall have the right to inspect any construction plant and to forbid its use, if in his opinion it is unsafe. No claim due to such prohibition shall be entertained by the Purchaser /Owner.
- 32.3 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 provisions and/or storage in accordance with the rules and regulations laid down in 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 approvals of Purchaser /Owner. In case any approvals are necessary from the Chief Inspector of Explosives or any statutory authorities, the Contractor shall be responsible for obtaining the same.
- 32.4 The Contractor shall be responsible for provision of all safety notices and safety equipment required both by the relevant legislations and the Purchaser /Owner, as he may deem necessary.
- 32.5 The Contractor shall be responsible for the safe storage of his and his Sub-Contractor's radioactive sources.

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- 33.1 In no circumstances will the Contractor interfere with fuses and electrical equipment belonging to the Purchaser /Owner or other Contractors.
- 33.2 Before the Contractor connects any electrical appliances to any plug or socket belonging to the other Contractor or Purchaser /Owner, he shall

- a) Satisfy the Purchaser /Owner that the appliance is in good working conditions.
- b) Inform the Purchaser /Owner of the maximum current rating, voltage and phases of the appliances.
- c) Obtain permission of the Purchaser /Owner detailing the sockets to which the appliances may be connected.

- 33.3 The OWNER will not grant permission to plug in, until he is satisfied that:

- a) The appliance is in good condition and is fitted with a 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.

- 33.4 No electric cable in use by the Purchaser /Owner will be disturbed without prior permission. No weight of any description will be imposed in any such cable and no ladder or similar equipment will rest against or be attached to it.

- 33.5 No work shall be carried out on any live equipment. The equipment must be made safe by the Purchaser /Owner and a permit to work issued before any work is carried out.

- 33.6 The Contractor shall employ the necessary number of qualified full-time electricians to maintain his temporary electrical installation.

**34.0 FOREIGN PERSONNEL:**

The expenditure incurred towards any foreign personnel brought to India for the services as warranted by the Contract including remuneration and taxes applicable thereof shall be born by the Contractor only. Any claim for payment by Purchaser on this account is not acceptable.

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35.1 The Purchaser /Owner may, in his absolute discretion, from time to time, issue further drawings and/or written instructions, details, directions and explanations, which are collectively referred to as "ENGINEER'S INSTRUCTIONS", in regard to:

35.1.1 Any additional drawings and explanations to exhibit or illustrate details.

35.1.2 Variation or modification of the design, quality or quantity of work or the additions or omission or substitution of any work.

35.1.3 Any discrepancy in the drawings or between the Schedule of Quantities and / or 'Specification'.

35.1.4 Removal from the 'Site' of any materials brought thereon by the Contractor and the substitution of any other materials thereof.

35.1.5 Removals and/or re execution of any work executed by the Contractor.

35.1.6 Dismissal from the work of any persons employed thereupon.

35.1.7 Opening up for inspection of any work covered up.

35.1.8 Amending and making good of any defects as per Clauses

35.2 The Contractor shall comply with and duly execute any work covered in such 'Engineer's Instructions' provided always that verbal instructions, directions and explanation given to the Contractor or his foreman upon the work by the Purchaser /Owner shall, if involving a variation, be confirmed in writing by the Purchaser /Owner within seven (7) days.

35.3 If compliance with the "Engineer's Instructions" as aforesaid involves work and scope beyond that contemplated by the 'Contract', unless the same were issued owing to some breach of this 'Contract' by the Contractor the Purchaser /Owner shall pay to the Contractor the price of the said work as an extra to be valued as hereinafter provided in Clause 39.0.

35.4 If the Contractor after receipt of written notice from the OWNER requiring compliance, with such further drawings and/or "Engineer's Instructions" fails to comply with the same within seven (7) days, the Purchaser /Owner may employ and pay other agencies to execute any such work whatsoever, as maybe necessary to give effect thereto; and all costs incurred in connection therewith shall be recoverable from the Contractor by the Purchaser /Owner on a certificate by the ENGINEER as a debt or may be deducted by the Purchaser /Owner from any money that may



become due to the Contractor.

**36.0 RIGHTS OF THE OWNER/ ENGINEER:**

**36.1 Right to Illustrate and Explain Plans:**

36.1.1 The various parts of the 'Contract' are intended to be complementary to each other but should any discrepancy appear or any misunderstanding arise as to the import of anything contained herein, the explanation of the Purchaser /Owner shall be final and binding.

36.1.2 The correction of any errors or omissions of the Drawings and Specifications may be made by the OWNER /ENGINEER, when such correction is necessary to bring out clearly the intention that is indicated by the reasonable interpretation of the Drawings and Specifications as a whole.

36.1.3 Whenever in the Specifications or on the Drawings which are a part of the 'Contract' or which may be furnished to the Contractor for directing this work, the terms and descriptions of various qualities of workmanship, materials, structures, processes, plant or other features of the 'Contract' are described in general terms, the meaning or fulfillment, of which must depend upon individual judgment, then in all such cases the question of fulfillment of such specifications or requirements shall be decided by the OWNER /ENGINEER and said material shall be furnished, said work shall be done, and said structure, process, plant or feature shall be constructed, furnished or carried on in full and complete accordance with his interpretation of the same and to his full satisfaction and approval, provided such interpretation is not indirect conflict with the Drawings and Specifications and generally accepted good practice.

36.1.4 Details shown either on the Drawings or in the Specifications shall be done and furnished as if shown in both except where expressly expected either in the specifications or on the Drawings. Figured dimensions shall in all cases be taken in preference to scale measurements, and detailed drawings consistent with general drawings in preference to the general drawings of the same part of the work.

36.1.5 The Purchaser /Owner may ask, from time to time, prepare estimates of quantities or bills of materials required for the work. Copies of such estimates or bills of materials which may be given to the Purchaser for his convenience, or any lists, weights or quantities of materials or structures which may appear on the drawings shall not be considered as finally correct, sufficiently complete, or accurately covering any portion or all of the work to be done under the 'Contract'. Such bills or estimates may be carefully assembled and prepared but their accuracy is not

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guaranteed. They may not be accurate as to any particular detail and are given only as the best information available at the time of issue of the information. It is understood that any such lists or estimates are furnished to the Purchaser/Owner for his convenience only and not as lists or estimates of work to be done, and many necessary items of work might have been omitted.

36.1.6 Additional drawings and explanations to exhibit or illustrate details may be provided by the OWNER/Contractor whenever necessary and if so provided, and if consistent with the Drawings and specifications, it shall be binding upon the Contractor to take cognizance of the same. The written decision of the Purchaser /Owner as to the true construction and meaning of the Drawings and Specifications and of such additional drawings and explanations shall be binding upon the Contractor.

**36.2 RIGHT TO DIRECT WORK:**

The Purchaser /Owner shall have the right to direct the manner in which all work under this 'Contract' shall be conducted, in so far as it may be necessary to secure the safe and proper progress and the specified quality of the work, and all work shall be done and all material shall be furnished to the satisfaction and approval of the OWNER.

36.2.1 Whenever, in the opinion of the Purchaser /Owner, the Contractor has made marked departures from the schedule of completion laid down in the 'Contract' or when untoward circumstances force a departure from the said schedule, the OWNER / ENGINEER, in order to assure the compliance with the schedule and the provisions of the 'Contract' shall direct the order, pace and method of conducting the work, which shall be adhered to by the Contractor.

36.2.2 If, in the judgment of the Purchaser /Owner, it becomes necessary at any time to accelerate the overall plant erection work, the Contractor, when ordered and directed by the Purchaser /Owner, shall cease work at any particular point and transfer his men to such other point or points, and execute such portion of his work, as may be required, to enable others to hasten and properly engage and carry on their work, all as directed by the OWNER.

36.2.4 Night work will be permitted only with prior approval of the Purchaser /Owner. The Purchaser /Owner may also direct the Contractor to operate extra shifts over and above normal day shift to ensure completion of 'Contract' on Schedule if, in his opinion, such work is required.

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If at any time, the Contractor's methods, materials or equipment appear to the Purchaser /Owner to be unsafe, inefficient or inadequate for securing the safety of the workmen or the public, the quality of work or the rate of progress required, he may increase their efficiency and adequacy, and the Contractor shall promptly comply with such orders. If at any time, the Contractor's work force and equipment are in the opinion of the Purchaser /Owner, inadequate for securing the necessary progress, as herein stipulated, the Contractor shall, if so directed, increase the work force and equipment to such an extent as to give reasonable assurance of compliance with the schedule of completion. The absence of such demands from the Purchaser /Owner shall not relieve the Contractor of his obligations to secure the quality, safe conducting of the work, and the rate of progress required by the 'Contract', and the Contractor alone shall be and remain liable and responsible for the safety, efficiency and adequacy of his methods, materials, working force and equipment, irrespective of whether or not he makes any change as a result of any order or orders received from the OWNER.

**36.3 RIGHT TO PERFORM :**

The Purchaser /Owner reserves the right to perform or have performed in and about the 'Works' during the time when the Contractor is performing his work here under, such other work as the Purchaser /Owner desires, and the Contractor shall make all reasonable effort to perform his work hereunder in such a manner as will enable such other work to be performed without hindrance and shall make no claim for damage against the Purchaser /Owner arising out of such other work or interference there from. The Contractor shall work in harmony with such other Contractors regardless of race, religion, colour, caste, gender, nationality or origin and any dispute between Contractors shall be arbitrated by the OWNER.

**37.0 MEASUREMENT OF WORK AND PROGRESS PAYMENTS:**

- 37.1 The Purchaser /Owner may, from time to time, intimate the Contractor that he requires the works to be measured and the Contractor shall attend or send a qualified agent to assist the Purchaser /Owner or his representative in taking such measurements and calculations and to furnish all particulars as may be required by him. Where the erection of equipment, vessels and structural steel is involved, the basis of such measurements and progress evaluation shall be weights specified in the shipping documents or invoices or drawings as decided by the Purchaser /Owner. Should the Contractor not attend, neglect, or omit to send such agents, then, the measurement

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taken by the Purchaser /Owner or approved by him shall be taken to be the correct measurements of the work. The Contractor or his agent may, at the time of measurement, take such notes of measurements as he may require. When measurements are affected by conditions already established, the Contractor shall take field measurements notwithstanding scale or dimensions shown on the drawings.

- 37.2 The measurements so taken and certified correct by the Purchaser /Owner shall be the basis for the progress payment to the Contractor. Where the breakup of 'Contract on unit basis price' is difficult to arrive at, the Purchaser /Owner and the Contractor shall workout at the commencement of the 'Contract', the weightages or the cost breakups to arrive at a mutually agreeable basis for computation of the progress estimates.
- 37.3 To the value so arrived at on the basis of the Contractor's monthly progress evaluated, shall be added the amounts earned by the Contractor under supplemental Contracts and orders, if any, till date of progress estimate. From the total thus computed, all previous payments plus any amounts due to the Purchaser /Owner in accordance with the terms of this Contract shall be deducted. The remainder shall be paid by the Purchaser /Owner to the Contractor under interim Certificates from the ENGINEER.
- 37.4 In case of work is nearly suspended, or incase only unimportant progress is being made, or in case it is apparent that the Contractor is about to forfeit his 'Contract' or that the money yet due to him shall not complete his 'Contract', the OWNER may at his discretion withhold any payment which may be due to the Contractor.
- 37.5 The Purchaser /Owner may withhold part or whole of any payment for erection claimed by the Contractor, which in opinion of the Purchaser /Owner, is necessary to protect himself from loss on account of :-
- a) Defective work not remedied or guarantees not met
  - b) Claims filed against the Contractor
  - c) Failure by the Contractor to make due payment for materials supplied or labour employed by him.
  - d) Damage to other Contractor's, Owner's or OTHERS' property.
  - e) Failure to meet the mutually agreed schedules.
- 37.6 When the grounds for withholding payments are removed, the Purchaser /Owner without delay

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shall make payments of the amount due to the Contractor.

- 37.7 The Contractor shall not demand nor be entitled to receive payment for the work or portion thereof, except in the manner set forth in this 'Contract' and only after the Purchaser /Owner shall have given a certificate for such payment.

**38.0 ADHERENCE TO MANUFACTURER'S INSTRUCTION:**

- 38.1 Adherence to instructions of the Manufacturer's supervisory Engineers, where provided is compulsory. The Contractor shall work under the guidance of the Manufacturer's supervisors to ensure that erection procedures adopted by the Contractor as well as completed erection of equipment is such as not to interfere with or prevent equipment from functioning as intended, as well as to the entire satisfaction of the Manufacturer's supervisor/OWNER. The Contract shall also permit and provide all facilities for the Manufacturer's erection supervisors to carry out all checks that they may wish to, and approve any erection procedure and/or final setting and alignment of components, in order to satisfy themselves that erection has been carried out as intended by them. This shall, however, in no way relieve the Contractor of his responsibility for providing adequate and competent supervision and quality workmanship. In case of any dispute, the decision of the ENGINEER shall be final.

- 38.2 Manufacturer's drawings & instruction manuals: Manufacturer's drawings, instructions and recommendations shall be correctly followed in handling, setting, testing and commissioning of equipment and extreme care shall be exercised in handling equipment to avoid distortion to stationary structures, the marring of surface finish, damage to delicate instruments and electrical parts.

**39.0 MODIFICATIONS:**

The Contractor shall carry out all modifications at 'Site' as directed by the Purchaser /Owner to complete the work covered in this 'Contract'. It is the responsibility of the Contractor to get the prior approval for such modifications from the Purchaser /Owner before such works are taken up. The Contractor shall also get the estimates and actual time sheets certified. Time sheets will be the basis for processing his bills for such modification works, which are required to be carried out for no fault of the Contractor.

**40.0 DEFECTIVE WORK:**

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- 40.1 If the work or any portion thereof shall be damaged in any way excepting by the acts of the Purchaser /Owner, or if defects not readily detected by prior inspection shall develop before the final completion and acceptance of the whole work, the Contractor shall forthwith make good, without compensation, such damage or defects in a manner satisfactory to the Purchaser /Owner. In no case shall defective or imperfect work be retained.
- 40.2 If the Contractor fails to remove or repair any defect within a reasonable time, the Purchaser shall do so by themselves or by any other agencies at the Contractor's cost and risk and cost of such repairs/removals will be adjusted against the amount due to the Contractor.

**41.0 WORK OF OTHERS:**

If any part of the Contractor's work depends, for proper execution, upon the work of any other Contractor, the Contractor shall inspect and promptly report in writing to the Purchaser /Owner any defect in such work or other Contractors that render it unsuitable for proper execution of the work under this 'Contract'. His failure to so inspect and report shall constitute an acceptance of the other Contractor's work as fit and proper for the reception of his work, except as to defects which may develop in the work of other Contractors after the proper execution of the work. To ensure proper execution of his subsequent work, the Contractor shall inspect work already, in place and shall at once report to the OWNER/ ENGINEER any discrepancy between the executed work and the drawings.

**42.0 HANDING OVER TO OWNER:**

In the event of the Contractor being prevented by causes not attributable to him from proceeding with erection or from completing erection before he withdraws from the "Site", he shall hand over to the Purchaser /Owner for safe keeping during his absence such Contract material that he is unable to erect, and the Purchaser /Owner will furnish a receipt for material so handed over.

**43.0 FACILITIES TO WORKERS:**

Minimum facilities for workers as per Factory Act shall be provided for by the Vendor/Contractor. If the Vendor / Contractor fail to do so, the same shall be provided by the PURCHASER and deducted the same from the Vendor / Contractor's bills.

**44.0 CODE REQUIREMENTS:**

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

**45.0 COORDINATION WITH STATUTORY BODIES & OUTSIDE AGENCIES:**

The Contractor is fully responsible for carrying out all coordination& liaison work to be required with Electrical inspectors, Factory inspector & other statutory bodies for implementation of the work. The application on behalf of the Purchaser for submission to the electrical inspector & 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 actual inspection work by the electrical inspector shall be arranged by the Contractor. However, any fees paid to electrical inspector/statutory bodies, etc. in this regard shall be borne by the Purchaser. Any modification on the installation suggested by the electrical inspector or any other statutory authority shall also be carried out by the Contractor at no extra cost by the Purchaser.

**46.0 SCHEDULE OF QUANTITIES - VARIATION:**

The quantities of the various kinds of work to be done and materials will be furnished at the time of award of Contract which have been estimated and set forth in the proposal or the Agreement or the lists of Contract prices, are the best available, but may not be accurate in any or all particulars and are only for the purpose of comparing, on a uniform basis, the bids offered for the work under the Contract. The Bidder agrees that neither owner nor any of the employee or agents thereof shall be held responsible if any of the estimated quantities should be found to be not even approximately correct in the construction of the work and that he shall not, at any time, dispute or complain of such statement nor assert that there was any misunderstanding in regard to the character, sizes and type of work to be done or the kind or amount of the materials to be furnished. Further, Contractor shall make no claim for anticipated profits, for loss of profit or for penalty because no work is ordered under certain items or because of a difference between the quantities of the various kind of work to be done or materials actually delivered and the estimated quantities set forth by owner.

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- 47.1 Bid shall be submitted strictly as per the format outlined in the schedules, to enable Purchaser/Engineer to evaluate the bids expeditiously.
- 47.2 The quantities stated in price schedule are approximate only and unit price shall apply to actual quantities measured on the completed work in accordance with specification and drawings.
- 47.3 Contract price shall include all traveling expenses to and from the site, allowances, living expenses, wages, salaries, overtime, benefits and all compensations for his skilled and unskilled workmen, supervisors, Engineers, clerical staff, watch and ward staff, storekeepers, etc., insurance carried by Contractor for his workers, workmen's compensation, third party liability and any other insurance required by the specification, cost of all licenses and permits, loading, transport and unloading of all material, tools and tackles, instruments and construction aids to and from the site, as per the specification, cost of providing office, tools room, quarters, canteen, workshops and all facilities at site as may be required, under the Contract, performance of all services as required under the Contract and satisfactorily executing the complete work under the Contract. If any fees are to be paid to the statutory authorities for testing, inspection or calibration, these shall be paid by Contractor and included in his cost.

**48.0 GUARANTEE: (Clause 14.0 of GCC)**

Twelve calendar months from the date of commissioning of the Substation/Bay Extensions/Tr. Line, unless otherwise agreed in writing by owner, will be deemed to be the '**Defect Liability Period (Guarantee Period)**'. The works shall not be considered as completed until owner has certified in writing that they have been virtually completed and the defect liability period shall commence from the date of such certificate. In case any defects in the work, due to bad materials, and/or bad workmanship, develop in the work before the expiry of the period, Contractor, on notification by Owner shall rectify or remedy the defects at his own cost and he shall make his own arrangements to provide materials, labour, equipment and any other appliances required in this regard. The performance security will be returned to Contractor only after the expiry of this defect liability period. In case even on due notification by Owner, Contractor fails to rectify or remedy the defects, Purchaser /Owner shall have the right to get this done by the other agents and recover the cost incurred by deductions from the retention amount or any other amount due to Contractor against this Contract, in case this cost is within the value of the performance security, and if not, Contractor shall be liable to pay to Owner the balance amount.



**49.0 TIME FOR COMPLETION AND EXTENSION OF TIME:**

- 49.1 Contractor shall be allowed admittance to the site on the 'date of commencement' and he shall there on and forthwith begin the works and shall regularly proceed with and complete the same on or before the schedule 'date of completion' as per the contract.
- 49.2 Contractor agrees that the work shall be commenced and carried on at such points, and in the order of precedence and at such times and seasons as may be directed by owner in accordance with the schedule for the completion of work as outlined in the Contract. Contractor declares that he has familiarized himself with the site and right of way, with all the local conditions, and with all the circumstances which may or are likely to affect the performance and completion of the work, and that he has allowed for such conditions in the preparation of this schedule. The progress of works shall be checked at regular monthly intervals and the percentage progress achieved shall be commensurate with time elapsed after the award of Contract.
- 49.3 However, it is not upon owner to notify Contractor when to begin, to cease or to resume the work, nor to give early notice of the rejection of faulty work, nor in any way to superintend so as to relieve Contractor of responsibility or of any consequence of neglect or carelessness by him or his subordinates.
- 49.4 No necessity for an extension of time is anticipated, but if untoward or extraordinary circumstances should arise beyond the control of Contractor, which in the opinion of owner should entitle Contractor to a reasonable extension of time, such extension may be granted but shall not operate to relieve Contractor of any of his obligations.
- 49.5 Contractor shall promptly notify owner any event or conditions, which might delay the completion of erection work in accordance with the approved schedule and the steps being taken to remedy such situation.
- 49.6 If Contract is delayed at any time in the commencement or during the progress of the work by any act, delay or neglect of owner or his employees, or by any other Contractor utilized by owner or by changes ordered in the work by owner, or by force Majeure, or by the reason of proceeding taken or threatened by or disputes with public authorities the time of completion shall be extended by a reasonable period as maybe mutually agreed, upon application from Contractor at the time of

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such special circumstances occurring and not towards the end of the Contract period. Force Majeure is herein defined as (1) any cause which is beyond the control of Contractor or owner, as the case may be (2) natural phenomenon including but not limited to weather conditions, floods, drought, earthquakes and epidemics (3) acts of any governmental authority, domestic or foreign, including but not limited to war, declared or undeclared, priorities, quarantine, embargoes, licensing control or production or distribution restrictions (4) accidents and disruptions including but not limited to fires explosions, breakdowns of essential machinery or equipment and power shortages, (5) transportation delay due to force Majeure or accidents, (6) strikes, slowdown, lockouts and sabotage, (7) riots and civil commotions, (8) failure or delay in Contractor's source of supply due to force Majeure causes enumerated at 1 to 7.

**50.0 DISCONTINUANCE OF WORK :**

Owner shall have the right to require the discontinuance of the work, in whole or in part, for such time as may be necessary, should the condition of the weather or flood or other contingencies make it desirable to do so, in order that the works shall be well and properly executed. Extension of time shall be granted to Contractor for discontinuance of work so required, and Contractor shall not claim for compensation or damage in relation thereto.

**51.0 PENALTY: (Clause 22.0 GCC)**

The time stipulated in the Contract for the execution and completion of the works shall be deemed to be the essence of the Contract. In the event Contractor fails to execute, complete and deliver the works within the time specified in the Contract, penalty will be levied as per Penalty clause in GCC.

**52.0 PRICES:** Please refer Section-II (ITB) of Volume-I :**53.0 BIDDER INFORMED AS TO THE CONDITIONS:**

53.1 Bidder shall inspect, examine and obtain all information and satisfy himself regarding all matters and things such as nature and character of work, site conditions and other relevant matters such as right of way, surface and subsurface water conditions to be encountered, the character of equipment and facilities needed for the execution of the work, the availability, location and suitability of all construction materials, the quantities of various sections of the work, and the local conditions, relating to the execution and maintenance of the works to be carried out under the Contract or any hindrance to or interference with construction and maintenance of the works

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from any cause whatsoever including any other operation of works, which may or shall be carried out on or adjacent to the site of these works, under the Contract and shall make allowance for all such contingencies in the Contract price and shall not raise any claims or objections against owner in any of such matters as mentioned above. The acceptance of the order or execution of the Contract shall be construed as evidence that such as examination was made and later claims for labour, equipment or materials required for difficulties encountered shall not be allowed.

- 53.2 Any record of subsurface condition, water records and other observations which may have been made by owner have been made with reasonable care and accuracy. Such records may be made available to the Bidder for his information, if available, but there is no expressed or implied guarantee, as to the accuracy of the records or any interpretation of the same.
- 53.3 Bidder shall recognize this and from own opinion of the character of materials to be excavated from an inspection of the ground and put his own interpretation on records. The prices quoted by Bidder shall be based on his own knowledge and judgment of the conditions and hazards involved and not upon any representation of owner.

**54.0 TERMS OF PAYMENT:**

The following terms of payment are only acceptable. Tenders received stipulating terms other than the following terms will be invalidated.

**54.1 PAYMENT TERMS FOR ERECTION:**

- a) Ninety percent (90%) payments of the periodical progressive bills for the erection works will be made for the items of work done. For this purpose, the Contractor shall submit bills to the concerned Executive Engineer regularly to ensure payments in time. The Contractor shall give the full details of items of works done against each location in support of the bill along with the summary sheet of payment particulars with the details of item wise quantity of work completed until the present claim, quantity of work completed against this claim and balance work to be carried out and corresponding amounts of payments. Bills submitted without supporting details will not be taken in to cognizance. Payment is subject to submission of performance security as per clause 15.0 of GCC by the Supplier/Contractor.

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b) Out of the balance 10% amounts, 5% payments will be released after completion of all the works & submission of Material Accounts subject to submission of the following certified by the field Engineer of TSTRANSCO.

- a. As built drawings.
- b. Instruction, O & M manuals and installation manuals as applicable.
- c. Reconciliation of bill of material and order as executed.
- d. Distribution copies of all drawings.
- e. Tools and plants.
- f. Equipment drawings, shop floor drawings and design calculation as applicable.

c) The balance (final) 5% will be paid after completion of one year performance guarantee period from the date of completion of all the works as per contract and settlement of material account (including Reactor payments).

**The date of commissioning/ energizing the equipment will not be considered for reckoning the performance guarantee period and the date of completion of all the works will only be considered as start date of Guarantee period.**

In case however, the balance materials are returned to TSTRANSCO well before the completion of the performance guarantee period, the 5% amount will be released against a bank guarantee for equal amount, which shall be valid for the performance guarantee period with two months claim period along with "Performance Security Bank Guarantee". "All banking charges should be to the account of the Contractor".

- d) Contractor shall not be entitled to the said retention amount, until he shall deliver to the Purchaser, a complete release of all works & materials arising out of this Contract or receipts in full in lieu thereof, and in either case an affidavit that so far as he has knowledge or information, licenses and other commitments for which any part of work could be failed. If any unsatisfied work remains after all the payments are made to the Contractor, he shall refund to the Purchaser, all moneys that the latter may be compelled to pay in discharging such including all costs and the attorney's fees so incurred.
- e) The Contractor will have to predefine the Bank details while entering into Contract. The payments will be transferred to the Contractor's bank account by the Purchaser. The Bank details of Bidder as above are final and shall not be revoked under any circumstances. The bank charges will be made to the account of Contractor. An amount of Rs. 50/- (Rupees Fifty only) will be recovered from the bill amount per each disbursement raised

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by the unit officer of TSTRANSCO.

**55.0 FINAL PAYMENT:**

Whenever, in the opinion of owner, the work covered by the Contract has been completed, he shall prepare a final abstract showing the total amount of work done by Contractor and its value under and according to the terms of the Contract. From the total value thus arrived at shall be deducted all previous payments and all deductions made in accordance with the provisions of the Contract. The remainder shall be paid by owner to Contractor within three months after the date of owner's final certificates.

- 55.1 Payment of the retention amount shall be due after the Defects Liability period of 12 calendar months, as per conditions stipulated in Clause 48 and clause 54.1 b & c of this section.

**56.0 TERMINATION OF CONTRACT BY OWNER:**

- 56.0.1 If Contractor (being an individual or a firm) commits any 'Act of Insolvency', or shall be adjudged an Insolvent, or shall make an assignment or composition for the greater part in number of amount of his creditors, or shall enter into a deed of Assignment with his creditors, or being an Incorporated Company shall have an order made against him or pass an effective Resolution for winding up either compulsorily or subject to the supervision of the Court or voluntarily, or of the official Assignee of Contractor shall repudiate the Contract, or if the Official Assignee or the Liquidator in any such winding up shall be unable, within seven days after notice to him requiring him to do so, to show, to the reasonable satisfaction of owner, that he is able to carry out and fulfill the Contract and if required by owner to give security thereof or if Contractor (whether an Individual, Firm or Incorporated Company) shall suffer execution to be issued, or if Contractor shall suffer any payment under the Contract to be attached to by or on behalf of any of creditors of Contractor or if Contractor shall assign or sublet the Contract without obtaining the consent in writing of owner, or if Contractor shall charge or encumber this Contract for any payments due or which may become due to Contractor there under, or if consultant shall certify in writing to the owner that in his opinion Contractor has abandoned the Contract, OR

- 56.1.1 Has failed to commence the work, or has without any lawful excuse under these conditions, suspended the progress of the works for seven days after receiving from owner written notice to proceed, OR

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- 56.1.2 Has failed to proceed with the work with such due diligence and failed to make such due progress as would enable the works to be completed within the time agreed upon, OR
- 56.1.3 Has failed to remove materials from the site or to pull down and replace works within seven days after receiving from owner written notice that the said materials or work were condemned and rejected by consultant under these conditions, OR
- 56.1.4 Has neglected or failed persistently to observe and perform all or any of the acts, matters or things by this Contract to be observed and performed by Contractor for seven days after written notice shall have been given to Contractor requiring Contractor to observe or perform the same, OR
- 56.1.5 Has, to detriment of good workmanship or in defiance of owner instructions to be contrary, Sub-Contracted part of the Contract. Then and in any of the said causes, owner may, notwithstanding any previous waiver, after giving seven days notice in writing to Contractor determine Contractor, but without thereby affecting the obligation and liabilities of Contractor, the whole of which shall continue to be in force as fully as if the Contract had not been so determined and as if the works subsequently executed, has been executed by or on behalf of Contractor. Any further, Owner by his agents or servants may enter upon and take possession of the works and all plant, tools, scaffolding, sheds, machinery steam and other power, utensils and materials, lying upon premises or adjoining lands or roads and use the same as his own property or may employ the same by means of his own servants and worsen in carrying on and completing the work or by employing any other Contractors or other person or persons to complete the works, and Contractor shall not in any way interrupt or do anything to prevent or hinder such other Contractor or other person or persons employed for completing and finishing or using the materials and plant for the works.

When the work shall be completed, or as soon thereafter as convenient, owner shall give in writing to Contractor to remove his surplus materials and plant and should Contractor fail to do so within a period of 14 days after issue of such notice, owner shall dispose them by suitable means and shall give credit to Contractor for the amount realized. Owner shall, thereafter, ascertain and certify in writing under his hand what (if anything) shall be due or payable to or by Contractor, after considering the realized value of the said plant and materials so taken possession of by owner, the expenses or loss which owner might have incurred in getting the works so completed and the progress or any other payments which may be due but not paid to Contractor. The amount so certified shall be paid by owner to Contractor or by Contractor to owner as the case may be and the certificate of consultant shall be final and conclusive.

**57.0 INDEMNITY BOND**

All materials/equipment supplied by the Contractor and through the sub-vendors including **TSTRANSCO supplied material allotted for this project** shall be handed over to the owner on delivery note. All such material/equipment shall be provided to the Contractor for erection purpose after executing an indemnity bond as per proforma in Conditions of Contract, Volume-I in favour of the owner against loss, damage and any risks involved, for the full value of the materials. This indemnity bond shall be valid till the scheduled date of testing, commissioning and handing over of the equipment to the Engineer.

**58.0 MATERIALS:**

The materials to be supplied by the Owner shall be taken delivery by the Contractor at any of the designated TSTRANSCO's stores/ site. The Contractor shall submit particulars of additional materials required if any for the completion of the work over and above the materials already received at site stores within a reasonable period. The loading and unloading, proper packing suitable to transport, insurance and proper storage of those materials shall be at the cost of the Contractor. The Contractor shall be responsible for the proper handling and storage of these materials from the time of their receipt up to the time of taking over of the completed equipment by the Engineer. Yards and stores provided by the Contractor for stacking and storage of materials shall be open for inspection by the owner as and when required.

**59.0 SURPLUS MATERIALS:**

On completion of works, all the surplus material which has been already billed by Contractor to TRANSCO but not used by Contractor in the project, shall be handed over designated TSTRANSCO stores at the cost of the Contractor within the time limit of 2 months of commissioning of the project. However, if the material is not handed over within such time limit or in the opinion of designate officer of TSTRANSCO who is in-charge of the works, such material is not in fit condition for use, such material shall be retained by the Contractor and recovery shall be made from Contractor at the rate as per the Contract rate.

In exceptional cases, in order to expedite work progress, whenever TSTRANSCO issues the material from its stores on returnable basis to the Contractor, the Contractor shall return such material within 30 days from the date of issue of such material along with interest on the value of such material at the rate of 2% per month or part thereof. However if Contractor fails to return

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material within 30 days of issue of such material, the material shall be deemed to have been sold to Contractor on the date of its issue to Contractor at a price which shall be 150% of the procurement cost and such cost shall be recovered from Contractor along with interest at 2% per month or part thereof from the date of issue of material till amount is recovered.

**60.0 Technical Audit:**

- i) All the completed works shall be technically audited by Quality Assurance wing within two months of the completion/commissioning of the project for the correctness of project in terms of agreements, specifications, detailed project report/technical sanction, deviation in quantities & rates.
- ii) All the remarks which are pointed out by Quality assurance wing in the above technical audit shall invariably attend by Construction wing within one month and in case the remarks are pertaining to the execution of work which is in the scope of the agreement, the Contractor has to attend the remarks without insisting of any additional payment.

**61.0 QUALITY ASSURANCE PLAN :**

The Quality Assurance Plan of TSTRANSCO is appended to this specification. The Bidders are advised to go through the same before quoting the bids. The successful Bidder will have to adhere to the Quality Assurance Plan during execution of works.

Contractor shall maintain the quality standards as per specification and shall attend the remarks of TSTRANSCO Quality Control wing on top most priority without any reminders from TSTRANSCO.

**Setting up of Quality Control Laboratory at Site:**

- (i) Appropriate grade of concrete and cement content for R.C.C. items may be scrupulously followed as envisaged in IS 456-2000 considering appropriate exposure conciliations.
- (ii) Using of M30 grade shall be mandatory for R.C.C. members of all structures located in coastal areas.
- (iii) A quality control laboratory shall be setup by the Contractor at the construction site for all major works in which the value of the civil works costing more than Rs. 2.00 Crore. List of testing equipment to be kept in the field laboratory is listed below.



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Sl. No.	Description of testing Apparatus/Equipment
1.	Core Cutter Apparatus.
2.	Standard Cone Penetration Test Equipment.
3.	Proctor Density test Apparatus.
4.	Compression Testing Machine.
5.	Concrete Test Hammer.
6.	Slump Cone Test Apparatus.
7.	Vicat Needle Apparatus.
8.	Sieve Analysis Apparatus for fine and coarse aggregates.
9.	Screw guage, Vernier calipers.
10.	Auto level, Theodolite, Chains and Ranging rods.

**Note:** In addition to the above field tests, the Contractor has to be conduct necessary lab tests as requested by the Engineer-in-charge/QC wing at Govt. Labs or at any reputed Govt./Private Engineering College testing labs/NABL accredited lab.