

# TECHNICAL SPECIFICATIONS

## SECTION-II

### 1.0 General technical conditions

#### 1.1 General

The following provisions shall supplement all the detailed technical specifications and requirements brought out herein. The contractor's proposal shall be based on the use of materials complying fully with the requirements specified herein.

#### 1.2 Drawings

1.2.1 The drawing will be supplied by the owner.

1.2.2 The work shall be performed by the contractor strictly in accordance with these drawings and no deviation shall be permitted without the written approval of the owner, if so required.

1.2.3 The approval of the documents by the owner shall mean that the owner is satisfied that:

(a) The contractor has completed the part of the works covered by the subject document (i.e. confirmation of progress of work).

(b) The works appear to comply with requirements of specifications.

In no case the approval by the owner of any document does imply compliance with neither all technical requirements nor the absence of errors in such documents.

If errors are discovered any time during the validity of the contract, then the contractor shall be responsible of their consequences.

1.2.4 The following is the general list of the documents that are to be approved by the owner.

(a) Quality plan for site activities including quality system.

(b) Sub-contractors approval, etc.

#### 1.3 Quality assurance & owner's supervision

##### 1.3.1 Quality assurance

To ensure that the services under the scope of this contract performed within the contractor's works or at his sub-contractor's premises or at site or at any other place of work are in accordance with the specifications, the contractor shall adopt suitable quality assurance programme to control such activities at all points necessary. Such programme shall be outlined by the contractor and shall be finally accepted by the owner after discussions before the award of contract. A quality assurance programme of the contractor shall generally cover but not limited to the following :

(a) His organisation structure for the management and implementation of the proposed quality assurance programme.

(b) Documentation control System.

- (c) Qualification data for contractor's key personnel.
- (d) The procedure for purchases of materials, and selection of sub-contractor's services including vendor analysis, source inspection, incoming raw material inspection, verification of material purchases etc.
- (e) Control of non-conforming items and system for corrective action.
- (f) Control of calibration and testing of measuring and testing equipments.
- (g) System for indication and appraisal of inspection status.
- (h) System for quality audits.
- (i) System for maintenance of records.
- (j) System for handling storage and delivery and
- (k) A quality plan detailing out the specific quality control procedure adopted for controlling the quality characteristics relevant to each item of supply.

The quality plan shall be mutually discussed and approved by the owner after incorporation necessary corrections by the contractor as may be required.

### **1.3.2 Owner's supervision**

1.3.2.1 To eliminate delays and avoid disputes and litigation it is agreed between the parties to the contract that all matters and questions shall be resolved in accordance with the provisions of this document.

1.3.2.2 The scope of the duties of the owner, pursuant to the contract, will include but not be limited to the following:

- (a) Interpretation of all the terms and conditions of these documents and specifications.
- (b) Inspect , accept or reject any equipment, material and work under the contract in accordance with the specifications.
- (c ) Issue certificate of acceptance and/or progressive payment and final payment certificate .
- (d) Review and suggest modification and improvement in completion schedules from time to time, and
- (e) Supervise the quality assurance programme implementation at all stages of the work.

## **2.0 Erection conditions**

### **2.1 General**

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 on this contract to be performed at site.

### **2.2 Regulation of local authorities and statutes**

2.2.1 The contractor shall comply with all the rules and regulations of local authorities during the performance of his field activities. He shall also comply with the minimum wages

act 1948 and the payment of wages act (both of the Government of India) and the rules made there under in respect of any employee or workman employed or engaged by him or his sub-contractor.

- 2.2.2 All registration and statutory inspection fees, if any, in respect of his work pursuant to this contract shall be to the account of the contractor. However, any registration, statutory inspection fees lawfully payable under the provisions of the statutory laws and its amendments from time to time during erection in respect of the transmission line, ultimately to be owned by the owner, shall be to the account of the owner. Should any such inspection or registration need to be re-arranged due to the fault of the contractor or his sub-contractor, the additional fees to such inspection and/or registration shall be borne by the contractor.

### **2.3 Contractor's field operation**

The contractor shall keep the 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 responsibilities towards the field activities. Such reviews shall also not be considered as an assumption of any risk or liability by the owner or any of his representatives and no claim of the contractor will be entertained because of the failure or inefficiency of any such plan or schedule or method of work reviewed. The contractor shall be solely responsible for the safety, adequacy and efficiency of tools and plants and his erection methods.

### **2.4 Progress report**

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

### **2.5 Man - power deployment report**

- 2.5.1 The contractor shall submit to the owner, on the first day of every month, a man power deployment schedule for each activity.
- 2.5.2 The contractor shall also submit to the owner on the first day of every month, a man power deployment report of the previous month detailing the number of persons scheduled to have been employed and actually employed.

### **2.5.3 Facilities to be provided by the contractor**

#### **2.5.3.1 Tools, tackle and scaffoldings**

The contractor shall provide all the construction equipment, tools, tackle and scaffoldings required for construction, erection, testing and commissioning of the transmission line covered under the contract. He shall submit a list of all such materials to the owner before the commencement of work at site. These tools and tackle shall not be removed from the site without the written permission of the owner.

### **2.5.3.2 First - aid and general hygiene**

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

Similarly, the labour colony, the offices and the residential areas of the contractor's employees and workmen shall be kept clean and neat to the entire satisfaction of the owner. Proper sanitary arrangements shall be provided by the contractor, in the work-areas, office and residential areas of the contractor.

Waste oil shall be disposed of in a manner acceptable to the owner. Under no circumstances shall waste oil be dumped into uncontrolled drains.

## **2.6 Fire Protection**

2.6.1 The work procedures that are to be used during the erection shall be those which minimise 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 site and equipment and material stores in safe containers.

2.6.2 All the contractor's supervisory personnel and sufficient number of workers shall be trained for fire-fighting and shall be assigned specific fire protection duties. Enough of such trained personnel must be available at the site during the entire period of the contract.

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

## **2.7 Security**

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 damages and loss.

## **2.8 Materials handling and storage**

2.8.1 All the supplies under the contract as well as owner supplied items arriving at site shall be promptly received, unloaded and transported and stored in the stores by the contractor.

2.8.2 Contractor shall be responsible for examining all the shipment and notify the owner immediately of any damage, shortage, discrepancy etc. for the purpose of owner's information only. The contractor shall submit to the owner every week a report detailing all the receipts during the week. However, the contractor shall be solely responsible for any shortages or damages in transit, handling and/or in storage and erection at site.

- 2.8.3 The contractor shall maintain an accurate and exhaustive record detailing out the list of all items received by him for the purpose of erection and keep such record open for the inspection of the owner.
- 2.8.4 All items shall be handled very carefully to prevent any damage or loss. The materials stored shall be properly protected to prevent damage. The materials from the store shall be moved to the actual location at the appropriate time so as to avoid damage of such materials at site.
- 2.8.5 All the materials stored in the open or dusty location must be covered with suitable weather-proof and flameproof covering material wherever applicable.
- 2.8.6 The contractor shall be responsible for making suitable indoor storage facilities, to store all items/materials which require indoor storage.

## **2.9 Construction management**

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 failing behind the schedule for reasons attributable to him, he shall take necessary action to make good for such delays by increasing his work force or by working overtime or otherwise to accelerate the progress of the work and to comply with schedule and shall communicate such actions 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.

## **2.10 Field office records**

The contractor shall maintain at his site office up-to-date copies of all drawings, specifications and 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 data to indicate as installed conditions of the material supplied and erected under the contract. Such drawings and engineering data shall be submitted to the owner in required number of copies.

## **2.11 Protection of property and contractor's liability**

The contractor shall ensure provision of necessary safety equipment such as barriers, sign-boards, warning lights and alarms, etc., to provide adequate protection to persons and property. The contractor shall be responsible to give reasonable notice to the owner and the owners 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 necessary arrangements with such owners, related to removal and/or replacement or protection of such property and utilities.

## **2.12 Insurance**

**2.12.1** In addition to the conditions covered under the title ‘insurance’ in GCC/SCC, the following provisions will also apply to the portion of works to be done beyond the contractor’s own or his sub-contractor’s works.

**2.12.2 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 provisions
Employee’s liability	As per statutory provisions

**2.12.3 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 other arising from the use of motor vehicles during on or off the site operations, irrespective of the ownership of such vehicles. The minimum liability covered shall be as herein indicated:

- (a) Fatal injury : Rs. 100,000.00P each person
- (b) Property damage : Rs. 100,000.00P each occurrence.

**2.12.4 Comprehensive general liability insurance**

2.12.4.1 The insurance shall protect the contractor against all claims arising from injuries, disabilities, disease or death of members of public or damage to property of others, due to any act or omission on the part of the contractor, its agents, its employees, its representatives and sub-contractors or from riots, strikes and civil commotion.

2.12.4.2 The hazards to be covered will pertain to all the works and areas where the contractor, its sub-contractors, its agents and employees have to perform work pursuant to the contract.

2.12.4.3 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 its liabilities either direct or indirect, in pursuance of the contract.

**2.13 Protection of monuments and reference points**

The contractor shall ensure that any finds such as relics, antiques, coins fossils, etc. which he may come across during the course of performance of his works either during excavation or elsewhere, are properly protected and handed over to the owner. Similarly, the contractor shall ensure that the bench marks, reference points etc., which are marked either with the help of owner or by the owner shall not be disturbed in any way during the performance of its works. If any work, is to be performed which disturbs such reference, the same shall be done only after these are transferred to other suitable

locations under the direction of the owner. The contractor shall provide all necessary materials and assistance for such relocation of reference points etc.

## **2.14 Work and safety regulations**

2.14.1 The contractor shall ensure safety of all the workmen, materials, plants and equipment's belonging to him or to the others, working at the site. The contractor shall also provide for all safety notices and safety equipment required by the relevant legislation's and deemed necessary by the owner.

2.14.2 The contractor will notify, well in advance to the owner, its intention to bring to the site any container filled with liquid or gaseous fuel or explosive or petroleum substance or such chemicals which may involve hazards. The owner shall have the right to prescribe the conditions, under which such a container is to be stored, handled and used during the performance of the works and the contractor shall strictly adhere to and comply with such instructions. The owner shall also have the right at his sole discretion, to inspect any such container or such construction plant. Equipment for which materials in the container is required to be used and if in his opinion, its use is not safe, he may forbid its use.

No claim due to such prohibition or towards additional safety provisions called for by him shall be entertained by the owner.

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

2.14.3 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 provision and/or storage in accordance with the rules and regulations laid down in petroleum act 1934, explosives Act 1948 and amendments thereof, and petroleum and carbide of calcium manual published by the Chief Inspector of explosives of India. All such storage shall have prior approval of the owner.

In case, any approval is necessary from the Chief Inspector (explosives) or any statutory authorities, the contractor shall be responsible for obtaining the same.

2.14.4 All equipment used in construction and erection by contractor shall meet Indian/International standards and where such standards do not exist, the contractor shall ensure these to be absolutely safe. All equipment shall be strictly operated and maintained by the contractor in accordance with manufacturer's operation manual and safety instructions and as per any existing guidelines/rules in this regard.

2.14.5 Periodical examinations and all tests for all lifting/hoisting equipment and tackle shall be carried out in accordance with the relevant provisions of factories act 1948, Indian electricity supply act and associated laws/rules in force from time to time. A register of such examinations and test shall be properly maintained by the contractor and will be promptly produced as and when desired by owner or by the persons authorised by him.

- 2.14.6 The contractor shall provide suitable safety equipment of prescribed standard to all employees and workmen according to the need, as may be directed by the owner who will also have the right to examine these safety equipment to determine their suitability, reliability, acceptability and adaptability.
- 2.14.7 Where explosives are to be used, the same shall be used under the direct control and supervision of an expert, experienced and qualified competent person, strictly in accordance with the code of practices/rules framed under Indian explosives act pertaining to handling, storage and use of explosive.
- 2.14.8 The contractor employing more than 250 workmen whether temporary, casual, probationer, regular or permanent or on contract, shall employ at least one full time officer exclusively as safety officer to supervise safety aspects of the equipment and workmen, such an officer will co-ordinate with the Project safety officer of the owner.
- The name and address of such safety officer of the contractor will be promptly informed in writing to the owner with a copy to the safety officer-in-charge before he starts work or immediately after any change of the incumbent is made during currency of the contract.
- 2.14.9 In case any accident occurs during the construction / erection or other associated activities undertaken by the contractor, thereby causing any minor or major or fatal injury to his employees due to any reason whatsoever, it shall be the responsibility of the contractor to promptly inform the same to the owner and also to all the authorities envisaged under the applicable laws.
- 2.14.10 The owner shall have the right to stop the work, if in its opinion the work is being carried out in such a way as may cause accidents and endanger the safety of the persons and/or property. In such cases, the contractor shall be informed in writing about the nature of hazards and possible injury/accident and he shall remove short-comings promptly. The contractor after stopping the specific work, can if felt necessary, appeal against the order of stoppage of work to the owner within 3 (three) days of such stoppage of work and the decision of the owner in this respect shall be conclusive.
- 2.14.11 The contractor shall not be entitled for any damages/compensation for stoppage of work due to safety reasons as provided in clause 2.14.10 above and the plea of such stoppage of work will not be taken as an extension of time, for completion of work and will not be the ground for waiver of any part of supplies liability for timely completion of the works.
- 2.14.12 The contractor shall follow and comply with all safety rules, relevant provisions of applicable laws pertaining to the safety of workmen, employees plant and equipment as may be prescribed from time to time without any demur, protest or contest or reservation. In case of any conflict between statutory requirement and safety rules referred above, the most stringent clause shall be applicable.
- 2.14.13 If the contractor fails in providing safe working environment as per safety rules or continues the work even after being instructed to stop work by the owner as provided in clause 2.14.10 above, the contractor shall promptly pay to the owner on demand,

compensation at the rate of Rs. 5,000/- (five thousand) per day or part thereof till the instructions are complied with and so certified by the owner. However, in case of accident taking place causing injury, to any individual, the provisions contained in clause 2.14.14 below shall also apply in addition to compensation mentioned in this para.

2.14.14 If the contractor does not take all safety precautions and/or fails to comply with the safety rules as prescribed by the owner or as prescribed under the applicable law for the safety of the equipment, plant and personnel and the contractor does not prevent hazardous conditions which may cause injury to his own employees or employees of other contractors or owner or any other person at site or adjacent thereto, the contractor shall be responsible for payment of compensation to the owner as per the following schedule:-

(a) Fatal injury or accident causing death per person.	Rs.1,00,000.00P (one lakh only)	applicable for death/ injury to any person.
(b) Major injuries or accident causing 25% or more permanent disability	Rs.20,000.00P (twenty thousand only) per person	whosoever

Permanent disability shall have the same meaning as indicated in workmen's compensation act. The compensation mentioned above shall be in addition to the compensation payable to the workmen/employees under the relevant provisions of the workmen's compensation act and rules framed thereunder or any other applicable law as applicable from time to time. In case the owner is made to pay such compensation, the contractor will be liable to reimburse the owner such amount(s) in addition to the compensation indicated above.

## 2.15 Code requirements

The erection requirements and procedures to be followed during the execution of the project shall be in accordance with the applicable Indian/International standards/regulations, as indicated in technical specifications, good engineering practice, the drawings and other applicable Indian codes, laws and regulations.

## 3.0 Owner's environment and social policy and its implementation

3.1 Development and growth of mankind through industrialization and unwarranted use of natural resources has inflicted considerable impact on environment and society. As a result, environmental and social issues have emerged as the focal point of global debate. Owner's activities by their inherent nature and flexibility have negligible impacts on environmental and social attributes. In order to address these issues and to match the rising expectations of a cleaner, safer and healthier environment, owner has evolved its environmental and social policy and procedures (ESPP). The key principles of owner's environmental and social policy are :

- (a) Avoidance of environmentally and socially sensitive areas while planning project activities.

- (b) Minimisation of impacts when project activities occur in environmentally and socially sensitive areas.
  - (c) Mitigation of any unavoidable adverse impacts arising out of its projects.
- 3.2 The contractor will ensure supply of stone chips/sand from authorised/approved quarry areas.
- 3.3 Proper documentation of above, if any.

**END OF SECTION - II**