

SPECIAL CONDITIONS

FOR CIVIL WORKS

1. GENERAL:

The following special conditions shall be read in conjunction with General Conditions of Contract.

2. TIME SCHEDULE:

As per Article – 3.02, the CONTRACTOR shall submit a detailed Bar Chart / PERT Net Work showing all activities including mobilization, site clearance, procurement of major construction materials like steel and cement, excavation, foundation, sanitary, water and electric supply work etc., to the approval of OWNER / ENGINEER and this shall form part of Agreement.

During the currency of the work, the Contractor is expected to adhere to the time schedule and this adherence will be part of the Contractor's performance under the Contract. During the execution of the work, the Contractor is expected to participate in the review and updating of the network undertaken by ENGINEER / OWNER.

CONTRACTOR shall mobilize and employ sufficient resources to achieve the detailed schedule within the broad frame work of the accepted methods of working and safety.

3. SUPPLY OF WATER & ELECTRICITY:

Water will not be supplied by department. The contractor shall make his own arrangement for procurement of these required for construction and workmen etc., at his cost.

4. SUPPLY OF ELECTRICITY:

Three phase LT Distribution power for construction activity will be provided on chargeable basis as per State Electricity Board charges by the Department through 32A capacity MCCB with Three phase energy meter at existing source/substation. The contractor has to make his own arrangements for drawing the construction power from this point up to work spot at his own cost. In case of any break down or insufficient supply of electricity, the contractor shall make his own arrangements of electricity power to augment supply commensurate to the schedule of completion of work. No claim will be entertained on this account. Any additional power required for any other purpose including running any specialized equipment like Pile Drilling machine, Concrete Boom lifts / cranes, fabrication of major steel works, stone crushers, batching plant, hot mix plant, paver etc., shall be arranged by the firm/contractor at their own cost. No claim of time extension and or money will be entertained by the Department on this account.

5. All items of work in this contract shall be executed in accordance with the description of the items of in the Schedule of Quantities, read in conjunction with Drawings and specifications.

(a) The quantities given in the Schedule are provisional. The OWNER reserves the right to increase or decrease the quantities of work or to totally omit any items of work and the Contractor shall not be entitled to claim any extra or damages on these grounds.

(b) Unless otherwise stated all measurements shall be taken in accordance with Indian Standard Method of Measurement of Building and Civil Engineering Works – IS: 1200-1970 and in accordance with Article-13 of the Agreement.

6. The Contractor shall be paid for the actual quantity of work executed by him in accordance with the drawings at the contract rates.

7. The rates for each item of work in schedule shall include supply (including the material supplied by the OWNER at the issue rates as indicated in Article-4.04) of all material, labour, tools and plants, transportation and incidentals required for full execution, testing, commissioning and completion of the installation as per specification and drawings. The rates shall also include all waste materials, hosting, lowering and fixing in position.

8. In the event of an error occurring in the amount column of the schedule, as a result of wrong extension of unit, rate and quantity shall be regarded as firm and amount shall be amended accordingly.

9. All errors in totalling in the amount column and in carrying forward totals shall be corrected.

10. The CONTRACTOR shall promptly execute all piping and ancillary work as required to connect up various equipment (viz. Pumps and Kitchen equipment) to be installed. Such work shall also be executed, measured and paid for under similar items of work included in this schedule.

11. The work shall be installed, tested and commissioned so as to fully comply with all relevant regulations of the concerned local Municipal, Public Health, Factory Inspector and other Authorities. The rates quoted in this schedule shall be deemed to have incorporated all costs, rates, duties and other expenses in connection with obtaining approvals from Local Authorities to commissioning and operate the Plumbing Services.

12. Only new materials of approved manufacture shall be incorporated in the works. Materials supplied to site shall be free from defects.

13. Piping system and ancillary work installed at site shall be leak proof. In this connection, CONTRACTOR shall arrange and pay for suitable tests as required by Engineer. Defective piping shall be removed and new leak proof piping installed in its place to the satisfaction of Engineer.

14. Execution of Work

(a) The contractor shall be responsible for executing the job as per detailed scope of work and these conditions in a workman like manner and as per the standard Engineering practice. All materials, labor, tools, plants, equipment, and transport etc., shall be procured by the contractor from his own resources. These shall be subject to approval by ENGINEER or his authorized representative.

(b) All stores and materials to be supplied by the contractor shall be best of the respective kinds described in the specifications and the contractor shall, at his own expense supply samples of such stores and materials as may be required by the Engineer-in-Charge or CCE who may reject all stores and materials not corresponding both in quality and character with approved samples. Officers concerned with the Job Order shall have power to inspect and examine any stores and materials intended to be used in the works either on or off the site and the contractor shall give such facilities as may be required for such inspection at any time.

(c) If in the opinion of the OWNER / ENGINEER, any work/or stores, materials provided by the contractor are not in accordance with or are inferior to those ordered, the contractor on demand in writing from the OWNER/ENGINEER shall forthwith rectify at his cost and risk all defects notwithstanding that the work and or the stores and materials may have been passed, certified and paid for. In the event of contractor's failure to do so, the OWNER/ENGINEER may get the defects rectified and recover the expenditure thus incurred from the contractor.

15. Minimum Wages

The following acts as amended from time to time shall be complied with by the contractor. Payment of Wages Act 1936, Minimum Wages Act 1948, Employer's liability Act 1938 and Workman's compensation Act 1923. The contractor shall pay not less than the 'Minimum Wages' to labor engaged by him on the work. 'Minimum Wages' means wages whether for time or piece – work notified at the time of inviting quotations and where such wages have not been notified, the wages prescribed by Chief Engineer of any Central Govt. Dept. for the station at which the work is done.

16. Deviations

The contractor shall undertake the work as per the scope of contract: In case the Government desire to carry out modifications /improvements /Additions /Alternations to those specifications laid down at Schedule 'of items hereto, the same shall be carried out by the Contractor on the under mentioned terms.

(a) If the modifications/improvements are of a major nature and results in additional expenditure to the Contractor, Govt. will arrange extra payment as per laid down procedure and standard practice.

(b) If the modifications/ improvements are of a minor nature, the job is to be undertaken without any additional payment over and above the total cost.

17. Measurements and recording

As soon as possible during the execution and / or after the completion of works to the satisfaction of the ENGINEER, measurements shall be taken, jointly by persons duly authorized on behalf of the both the parties, recorded in the Measurement Book and signed by both parties in token of their acceptance. The contractor shall forward a certified final account in triplicate, together with all abstracts, vouchers, etc. supporting it for payment. Payment shall be made for the actual measured work.

18. Technical Specifications to be followed for execution of work should only be as per CPWD Specifications 2019 Vol-1 and Vol-2 with correction slips up to last date of submission of tenders.

19. Exception should be only for the items, for which Particulars/ Specific Specifications are to be given where it is specifically mentioned otherwise in the description of the items.

20. MATERIALS:

(a) The CONTRACTOR shall arrange for all the materials required for incorporating in the work including cement and steel.

(b) Reinforcement / structural steel for all sizes shall be procured from the main / primary producers only i.e. as per the list of approved makes.

(c) Secondary producers of reinforcement / structural steel will be permitted in case of non-availability certificate given by the main primary producers. Make of steel of the secondary producer shall be as approved by the owner and shall be based on the credentials / confirmation of the reinforcement / structural steel quantity in the contract is less than 10MT, reinforcement / structural steel may be procured from secondary producers after obtaining approval from the owner for which non-availability certificate from main/ primary producers is not required.

(d) For every lot of steel the Engineer shall obtain the particulars of the manufacturer / supplier of steel from the contractor separately and ensure that contract shall place demand / requisition of steel with adequate lead-time.

(e) The Engineer shall verify the original documents in support of the purchase of steel and will retain certified true copy of documents along with the test results at site.

(f) The contractor shall not procure steel directly from authorized conversion agents or dealers. The contractor shall procure steel from authorized conversion agent or a agent or a dealer only when it is allocated to the agent or the dealer by the main / primary steel producer.

21. RECOVERY OF AMOUNT FOR NON PERFORMANCE OF WORK/ NON COMPLETION OF WORK AS PER MILESTONES AT INTERMEDIATE STAGES

The Contractor will adhere to the time frame specified for the work in the contract. Since the PDC of the work is 11 (Eleven) months certain recovery of amount will be made for non-performance of work / non completion of work as per milestones at intermediate stages. The schedule of work shall consist of the following milestones.

i) MILESTONE – I:

- **Time Frame: 05 (Five) months from effective date of LOI.**
- Financial Target: **30%** of Contract value.
- **Recovery of Non- Performance at MILESTONE- I.** The recovery will be made at the rate of **Rs.1,00,000/-** per day or LD1, whichever is higher, subjected to a maximum of 1.5 % of the total contract price.

$$LD1 = \frac{0.015 \times \text{Contract value}}{\text{No of days between Milestone I \& II}}$$

The payment shall be withheld from the RAR due to the contractor.

ii) MILESTONE – II:

- **Time Frame: 08 (Eight) months from effective date of LOI.**
- Financial Target: 70% of Contract value.
- **Recovery of Non- Performance at MILESTONE- II.** The recovery will be made at the rate of **Rs.1,50,000/-** per day or LD2, whichever is higher, subjected to a maximum of 3 % of the total contract price.

$$LD2 = \frac{0.03 \times \text{Contract value}}{\text{No of days between Milestone II \& III}}$$

The payment shall be withheld from the RAR due to the contractor.

iii) MILESTONE-III (PDC as per LOI) – III:

- **Time Frame: 11 (Eleven) months from effective date of LOI.**
- Financial Target: 100% of Contract value
- **Recovery of Non- Performance at MILESTONE- III.** If the total work is not completed within the above stipulated time frame specified at MILESTONE– III, then recovery will be imposed as stipulated in Article 21 of the General Conditions of Contract i.e, Liquidated damages for delay since the completion at MILESTONE – III is also the completion period of the entire work.

iv) RELEASE/ FORFEITURE OF WITH HELD AMOUNT:

- The total amount withheld on account of Non-Performance of completion schedule at **MILESTONE –I** will only be released, if the contractor is able to complete the work along with the scope of work specified at **MILESTONE – II** otherwise the amount withheld on this account will be forfeited by the department.
- The total amount withheld on account of Non-Performance of completion schedule at **MILESTONE–II** will only be released, if the contractor is able to complete the work at the end of **MILESTONE-III** along with the scope specified in **MILESTONE–II & MILESTONE–III** otherwise the amount withheld on this account will be forfeited by the department.
- In case the total work (including that at **MILESTONE– I, II &III**) is not completed within the stipulated time frame of the contract then the following conditions for recovery will be applicable.
- In case the amount is forfeited either at **MILESTONE-I** or **MILESTONE –II**, then the total liquidated damages to be recovered will be equal to the total amount of liquidated damages applicable (as per general condition of contract) less the amount forfeited either at **MILESTONE–I** or **MILESTONE –II**.
- In case the amount is forfeited at both the **MILESTONE-I** and **MILESTONE –II** then the total liquidated damages to be recovered will be equal to the total amount of liquidated damages applicable (as per general condition of contract) less the amount forfeited at **MILESTONE–I & MILESTONE –II**. In no case the recovery against the subject contract will be more than 10% of the total contract price.

SPECIAL CONDITIONS (Work specific Conditions)

- .1. **Access restrictions:** The work is to be executed in Telemetry station at P1 site, Konark, ITR and access/movement restrictions shall be complied with as per Employer's rules and regulations and planned accordingly.
- .2. **Contractor's establishment:** The space around the construction site within the Telemetry station at P1 site, Konark, ITR to the extent shown at site location or as shown in site layout plan is available free of cost for setting up of site office but only after getting approval from user agency. Labour camp and other infrastructure should be planned outside DRDO land by contractors at his own arrangements.
- .3. **Protection against claims of damage:** The employer shall be protected against claims of damage to person or property as prescribed in general conditions of contract
- .4. **WORK IN RESTRICTED AREA& TEMPORARY BARRICADES**

The work is to be carried out in restricted area, whenever necessary, the work shall be carried out in the non-office period. The Contractor shall have to coordinate with the Employer for locating T&P and stacking of materials etc. Proposed construction site shall be separated from the existing building area by providing temporary barricades Nothing extra shall be paid to the Contractor for all the above factors.

.5. **ARRANGEMENT OF SITE OFFICE BY CONTRACTOR**

5.1 The contractor should arrange necessary registers and stationery required for entering data and test results at his own cost as directed by the Engineer-in-Charge, along with furniture, air conditioner & storage space as per approved plan.

5.2 The Contractor shall maintain the office in good condition and provide facilities for having the office cleaned every day and keep the same in hygienic conditions.

- .6. **CLEARANCE OF SITE:** Clearing contractor's establishment: The contractor shall remove the labour huts; temporary barricades etc. on completion of the work and leave the site in a neat and tidy state. The payment of final bill will be subject to the compliance of this condition by the contractor.

.7. **CONTRACTOR'S SITE ORGANISATION**

Subject to the provisions in the tender document and without prejudice to contractors' liabilities and responsibilities to provide adequate qualified and skilled personnel on the work. Contractor shall deploy site organization and augment the same as decided by the Engineer-in-Charge depending on the exigencies of work. No engineering personnel deployed at site shall be removed from the site without prior approval of the Engineer-in-charge.

.8. **FIELD LABORATORY AND LIST OF EQUIPMENTS**

The contractor at his own cost shall set up a fully furnished and adequately equipped field laboratory at site within 30 days from the schedule date of start of work and maintain the same by providing adequate technical and upkeep staff. The laboratory should have office space for engineers to do testing and store for storage of samples. The remaining space shall be provided for the installation of equipment, laboratory tables and cupboards, working space for carrying out tests, besides a wash basin. The following minimum equipment shall be provided in the laboratory:

S.NO.	DESCRIPTION OF ITEMS	QUANTITY
A.	Compression Testing Machine (500 T)	1 No.
B.	<u>GENERAL</u>	
i)	Balance 20 kg capacity-self indicating type	1 No.
ii)	Electronic Balance 5 Kg capacity 0.5 gm.	2 Nos.
iii)	Thermometers: Mercury-in glass thermometer range 0 to 250 deg C. Mercury-in steel thermometer with 30 cm stem, range upto 300 deg C.	4 Nos.
iv)	First Aid Box	1 Set
v)	Set of IS sieves with lid and pan with mechanical shaking arrangement; 450 mm diameter :for sieving 63mm, 40mm, 20mm, 16mm, 12.5mm, 10mm and 4.75mm size and any other sieve required at site.	1 Sets.
vi)	200 mm diameter :10mm, 4.75mm, 2.0mm, 1.18mm, 600 micron, 425 micron, 300 micron, 150	1 Sets.

	micron and 75 micron and any other sieve required at site.	
vii)	Slump test cone Silt measuring Jar Screw gauge Vernier Calipers	1 Set
viii)	Mould for cube test	12 Nos.
C.	APPARATUS FOR AGGREGATES	
D.	SURVEYING INSTRUMENTS	
i)	Auto-levelling Instrument with staff.	1 Sets
ii)	Steel Tapes 30 meters, 15 meters and 5 meters.	2 Nos. each
iii)	Digital Theodolite/ Total stations	1 No.
iv)	Vicat Apparatus for cement tests	1 No.

In addition to tools, equipment's, apparatus and instruments as described above, if any, additional tools, equipment apparatus and instrument are required for laboratory and execution of work as per technical specification of NIT the same shall be provided by contractor. Nothing extra shall be payable to contractor on this account.

The Engineer-in-Charge may at his discretion, check the test results obtained at contractors laboratory by independent tests at an approved laboratory. The cost of such material, transport, cost of testing etc. shall be borne by the contractor. All machines / measuring equipment shall have latest calibration certificates.

.9. **LABOUR CAMPS:** Labor camp should be located outside DRDO land.

.10. **INSPECTION OF SITE AND TESTING**

i) The Engineer-in-Charge or his authorized representative shall have full power to inspect any portion of the work, examine the materials and workmanship at the contractor's works or at any other place from where the material is obtained. Acceptance of any material shall in no way relieve the contractor of his responsibility for meeting the requirement of the specifications.

ii) Routine type tests for the various items of material shall be performed at the contractor's works and test certificates furnished.

.11. **ADMISSION TO SITE:** The right of admission to site shall be as directed by the Employer.

.12. **STORES AND MATERIALS:**

No storage accommodation will be arranged by The Employer, Contractor shall make all such arrangements at his own cost to the satisfaction of Engineer-in-Charge.

.13. SITE FOR STACKING OF MATERIALS, MACHINES, INSTALLATIONS OF T&P AND CONSTRUCTION OF TEMPORARY HUTMENTS:

The contractor shall not be permitted to enter (other than for inspection purpose) or take possession of the site until instructed to do so by the Engineer-in-Charge in writing. The portion of the site to be occupied by the contractor shall be defined and/or marked on the site plan, failing which these shall be indicated by the Engineer-in-Charge at site and the contractor shall on no account be allowed to extend his operations beyond these areas. In respect of any land allotted to the contractor for purpose of or in connection with the contract, the contractor shall be a licensee subject to the following and such other terms and conditions as may be imposed by the licensor.

- i) That such use or occupation shall not confer any right of tenancy of the land to the contractor.
- ii) That the contractor shall be liable to vacate the land on demand by the Engineer-in-Charge.
- iii) That the contractor shall have no right to any construction over this land without the written permission of the Engineer-in-Charge. In case, he is allowed to construct any structure he shall have to demolish and clear the same before handing over the completed work unless agreed to the contrary.

.14. Client not to issue any Material: The client/ Employer shall not issue any material/ Machinery or Tools & Plants and the contractor has to make his own arrangements.

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SPECIAL CONDITIONS FOR ELECTRICAL WORKS

1. GENERAL:

1.1 These Special Conditions shall be read in conjunction with the description of the item of work in the Bill(s) of Quantities, the particular specifications, Local Statutory Regulations, Indian Standard Specifications/Codes and the drawings. All the above quoted documents, shall be considered supplementary to each other. However, in the case of conflict amongst the various provisions the owner's and the owner's opinion will be final and shall be adopted.

1.2 The CONTRACTOR(s) shall employ only Licensed Electrical Contractors for carrying out the Electrical works and the names of such Contractor(s) shall be indicated along with Tender. The Sub-Contractor(s) engaged for the work shall be cleared by the OWNER.

1.3 The tenderer is advised to inspect the site to ascertain the nature of site, access thereto, local facilities for procurement of materials and working.

2. The Department reserves the right to accept the Tenders in part or whole without assigning any reason there for and the successful tenderer is bound to execute respective part of the work awarded to him.

3. In case, sections of work are awarded to different Contractors, each Contractor shall be responsible for coordinating his work with other contractors. The responsibility for ensuring correct alignment and positioning of the equipment, particularly with reference to equipment connections shall be that of the Contractor carrying out that part of work.

4. Tender Specifications and tender Drawings:

- 4.1 The drawings furnished to the tenderers shall be interpreted by the use of given dimensions\ and nomenclature only and the drawings shall not be scaled for any reasons. Drawings to a large scale have precedence over those to a smaller scale. These drawings are general in nature and cannot be regarded as working drawings.

- 4.2 Drawings have been prepared showing 11/0.433KV Transformers, MV Panels, capacitor bank panels, LT cable routing, HT DG sets, Internal Schemes, Power wiring, shop electrical, special earthing, Lightning protection, fire alarm system, Communication System, Fire Fighting & Water Supply Complete etc.. The equipment offered shall be accommodated within the space provided. No additional space will be provided.

- 4.3 Layout of equipment, cable routing as shown in the Drawings, represent a feasible scheme. Apparatus may be rearranged in the space allocated subject to the approval of Engineer-in- charge.**

5. Detailed Working Drawings :

- 5.1 Prior to the execution of work, the Contractor shall check all drawings, specifications and shall report any errors within fifteen days, discrepancies and/or omissions discovered therein to the Engineer in charge and obtain appropriate orders on the same. Any adjustment made by the contractor without prior approval of the Engineer in charge shall be at his own risk and cost.

- 5.2 The Drawings attached to these specifications are general in nature and cannot be regarded as Working Drawings. The Contractor shall prepare his own detailed working drawings and get them approved by Engineer-in-charge before execution.

- 5.3 Cost of all Shop Drawings/GA fabrication drawings and details to be furnished by the Contractor shall be deemed to be included in his tendered rates of work. Approval of Shop Drawings etc. shall not be construed as authorizing additional work or increased cost to the company unless such additional works are authorized in writing by the Engineer- in-charge.

- 5.4 Prior to the submission for approval, the contractor shall be responsible for thoroughly checking all drawings to ensure that they comply with the intent and the requirements of the contract specifications and that they fit in with the overall building layout.

- 5.5 The Contractor shall secure the approval of the Engineer-in-charge for his detailed working drawings before proceeding with the work. For this purpose he shall submit six sets of drawings to the Engineer-in-charge. Any alterations proposed by the Engineer-in-charge shall be incorporated in the drawings by the Contractor and the corrected drawings shall be submitted once again in six sets to Engineer-in- charge.

5.6 The approval of drawings by the Engineer-in-charge shall not be construed as a complete dimensional check but will indicate all the general method of construction and detailing is satisfactory. The Contractor shall be responsible for the dimensions and design of adequate connections, supports details etc. and for the satisfactory construction of the work.

5.7 The detailed Working drawings/Shop drawings to be submitted by Contractor shall comprise all aspects of 11/0.433KV Transformers, VCBs, Battery charger, MV Panels, Capacitor bank panels, LT cable routing, LT DG sets, Internal Schemes, Power sockets, Special earthing, telephone sockets, Lightning protection, fire alarm schemes, Fire Fighting & Water Supply Complete etc., exhibiting all the details.

5.8 After installation is completed, 6 sets of As built Drawings & 2 sets of soft copy CD ((all Autocad format) shall be prepared in full details and submitted to the Engineer-in-charge/ Consultant within 2 weeks from the date of virtual completion.

6. RATES

(a) The tenderers are required to quote their rate as percentage i.e., (+) or (-) over estimated cost in the Price Bid i.e., Percentage BOQ. If any item is not available in the schedule of items, the rate for that item shall be arrived based on market rate analysis and that item shall be executed as non-schedule item and payment shall be made accordingly

(b) The rates mentioned includes all minor extras and constructional details which are not specifically shown on drawings or given on the specifications but are essential in the opinion for the Engineer-in-Charge for the execution of works to confirm to good workmanship and sound engineering practice. The owner reserves the right to make any minor change(s) during execution without any extra payment.

(c) The owners decision to clarify any item under minor changes, minor extras and constructional details shall be final, conclusive and binding on the CONTRACTOR.

(d) The Percentage quoted by the CONTRACTOR shall be net so as to include all requirements described in the Contract Agreement.

(e) The percentage quoted by the CONTRACTOR shall include for supplying materials and labor necessary for completing the work in the best and most workmanship like manner to the satisfaction of the owner and which in the opinion of the owner cannot be made better, and for maintaining the same. The rates shall be complete in all respects also including cost of materials, erection, fabrication, labor, supervision, tools and plant, transport, sales and other taxes royalties, duties and materials, contingencies, breakage, wastage, sundries, scaffoldings etc., on the basis of works contract. The rates quoted shall include all taxes, duties, transport, insurances, octroi, or any other levies applicable under the statute.

(f) In case the rates of identical items under different sub heads/ parts are different, the lowest of these will be taken for the purpose of making the payments.

(g) The Price schedule carries a list of suitable quantities of variable items of like cabling, erection of street light poles. Etc., Tenderers shall include in their tender only the quantities furnished therein, they shall however work out an estimate of their own with the help of data and drawings furnished in the specifications and in the event of their estimated quantities difference from those indicate the difference on prices, if any, for carrying out the work with the quantities worked out by them.

7. Testing

7.1 After manufacture of the equipment, all the necessary routine tests shall make under the direction and the presence of the Engineer in Charge or his representatives of such inspection and tests as the Engineer in charge shall consider necessary to determine whether or not the full intent of the requirement of the plan and specifications have been fulfilled.. In case the work does not meet the full intent of the specifications and further tests are considered necessary the contractor shall bear all the expenses thereof.

7.2 Routine and Type tests for the various items of equipment shall be performed at the Contractors works and test certificates furnished. If required by the Engineer in charge the Contractor shall permit the company's authorized representative to be present during any of the tests.

7.3 The Contractor shall provide all test equipment, labour and operating service required for these tests.

7.4 All equipment shall be tested as per Tender Specifications. Where test results indicate capacity less than the specified in equipment schedule, the contractor shall replace such equipment with equipment of stipulated capacity within the guarantee period. All instruments shall be of the required accuracy and shall be furnished by the contractor.

7.5 The contractor shall engage third party agency for relay coordination's, testing's of all items like CT/PT, Meters, Capacitor bank, HT & LT cable, Earthing values, HT & LT panels, DG sets and synch panel, Firefighting/water pumps, Pipes line, Water treatment and the charges for the same is deemed to be included in the contract items. Third party certification (three sets) for above services shall be submitted to Engineer in charge/Consultant by the contractor.

8. Operations after Test:

After the test and from the day of putting the plant to beneficial use by the department, the contractor shall be responsible for operating the plant for 60 days for which he shall make provision in his contract for all the necessary staff including operators for the daily operation of the plant as per the schedule given by the owner.

9. Training of Personnel:

9.1 The Contractor shall fully train the Department's operating and maintenance staff in the operation, repairs, and maintenance procedure during installation and maintenance period.

9.2 Routine operation of the plant during 60 days after putting the plant to beneficial use by the company will be done by the department's operating staff along with the Contractor's staff. Department's staff will be inducted for necessary training during planning, installation, testing and commissioning of the plant also Engineer in charge reserves the right to witness the test. Minimum of Five days advance intimation should be given before carrying out the tests. However stage inspection may be carried out from time to time to check progress of work and workmanship.

9.3 Six copies of test certificates for all tests carried out along with copies of type test certificate to be submitted before dispatch of the equipment.

9.4 All testing shall be done before the installation is accepted as and when directed by the Engineer in Charge, by workmen thoroughly experienced in this work.

9.5 Upon notification of the Engineer in Charge from the contractor that the installation has been completed, the contractor shall make under the direction and in the presence of Engineer in charge or his representative such inspection and tests as the Engineer in charge shall consider necessary to determine whether or not the full intent of the requirements of the plant and specifications have been fulfilled. In case the work does not meet the full intent of the specifications and further tests are considered necessary the contractor shall bear all the expenses thereof.

10. MATERIALS

The CONTRACTOR shall ensure to the satisfaction of the Owner/Employer that the materials are packed in Original sealed containers/packing bearing manufacturer's markings and brands etc., except where the gross quantity required is a fraction of the smallest packings. Materials not complying with this requirement shall be rejected.

11. TESTING OF MATERIALS:

(a) When required by the owner, the CONTRACTOR shall provide all facilities at site or at manufacturer's works or in an approved laboratory for testing the materials and/or workmanship. All the expenditure in respect of this shall be borne by the CONTRACTOR unless specified otherwise in the Contract. The Contractor shall when required to do so by the Owner shall submit at his own cost, manufacturer's certificate of tests, proof sheets, mill sheets etc., showing that the materials have been tested in accordance with requirements of these specifications.

(b) Neither the omission by the owner to test the materials nor the production of manufacturer(s) certificate etc., as aforesaid shall affect the right of the Owner to reject, after delivery the materials found unsuitable or not in accordance with the specifications.

12. DRAWINGS

Clarifications required or discrepancies, if any, noted by the Contractor in the various drawings supplied by the Owner must be obtained well before execution, failing which the decision of the Owner shall be final and binding on the Contractor with regard to detailing and general acceptance of the Contract.

13. RECTIFICATION OF DEFECTS

Any defect in the work done or materials used in the works pointed out by the Owner shall be rectified within a week or such extended time as may be allowed in this failing which the said defect shall be got rectified by the Owner at the risk and cost of the Contractors.

14. CONDUIT LAYOUT

Prior to the laying of the conduits, the Contractor shall submit to the OWNER detailed layout plans of the conduit network and get the same approved. The layout plans shall contain particulars regarding size and routes of the conduits, number of wires carried and the inspection and junction boxes provided along the routes of these conduits.

15. REGULATIONS & STANDARDS

The installation shall conform in all respects to Indian Standard Code of Practice for Electrical Wiring Installation IS: 732 and IS:2274. It shall also be in conformity with the current Indian Electricity Rules and Regulations and requirements of the local Electric Supply Authority in so far as these become applicable to the installation. Wherever this specification calls for higher standard of material and/or workmanship than those required by any of the above regulations then this specifications shall take precedence over the said regulations and standards.

16. SHOP DRAWINGS

The CONTRACTOR shall prepare and submit to the OWNER for the approval of detailed fabrication drawings for Main LT Panels/Switch Gears/rising Mains special boxes and Distribution Board, Switch board, special any other equipment to be fabricated by Contractor within 60 days of signing of the Contract.

17. COMPLETION DRAWINGS:

At the completion of the work and before issuance of certificate of virtual completion, the CONTRACTOR shall submit to the OWNER layout drawings drawn at approved scale indicating the complete wiring system "As Installed". These drawings shall in particular, give the following information

- (a) Run and size of conduits, inspection, junction and pull boxes.
- (b) Location and rating of sockets and switches, controlling the light and power outlets.
- (c) Number and size of conductors in each circuit.
- (d) Location and details of distribution boards, mains, switches, switchgear, and other particulars.
- (e) A complete wiring diagram, as installed and schematic drawings showing all connections in the complete system along with duly signed register for IR value of all circuit.
- (f) Location of telephone outlets, TV Music and Fire Alarm outlet boxes, junction boxes, sizes of various conduits.
- (g) Locations of all earthing stations, routes and size of all earthing conductors, manholes etc. Layout and particulars of all cables along with duly signed register for Earth Resistance value of all circuit.

18. MANUFACTURER'S INSTRUCTIONS:

Where manufacturers have furnished specific instructions, relating to the materials used in this job, covering points not specifically mentioned in the documents, these instructions shall be followed in all cases.

19. COMPLETION CERTIFICATE:

(a) On Completion of the Electrical installations a Certificate shall be furnished by the CONTRACTOR counter signed by a licensed supervisor, under whose direct supervision the installation was carried out.

(b) This Certificate shall be in the prescribed form as required by the local supply authority. The CONTRACTOR shall be responsible for getting the drawings and Electrical Installation inspected and approved by the local Authority concerned.

20. QUALIFIED COMPETENT SUPERVISION

The CONTRACTOR shall employ fully competent, licensed, qualified, full time Engineer to direct the work of Electrical installation in accordance with drawings and specifications. The Engineer shall be available at all times on the site to receive instructions from Owner in the day to day activities, throughout the duration of the contract. The foremen shall co-relate the progress of the work in conjunction with all relevant requirements of the supply authorities.

21. APPROVAL FROM SEB/ELECTRICAL INSPECTORATE:

(a) The contractor shall prepare and submit all the relevant drawings/ Test Certificates as per the requirement of SEB /Electrical Inspectorate & local electrical authority and get the installation approved before commissioning the Electrical system and no fees will be paid towards the same. Only statutory fees if any will be paid

(b) The work will be deemed to be completed only after certification / inspection by electrical inspectorate of DRDO / TRANSCO and subsequent handing over of commissioned of the system to TRANSCO to their entire satisfaction.

(c) The contractor shall furnish acceptance certificate issued by TRANSCO (Transco VCB & Metering) from an Authority not less than executive engineer, electrical.

(d) The contractor shall maintain all documents connected with construction activities and shall handover the same to TRANSCO (Transco VCB & Metering) after commissioning in a complete manner.

22. SUPPLIERS FOR PLC BASED CONTROL SYSTEM

The Contractor shall employ any system house of PCC Based Control System manufacturer to design fabricate supply install, test and commission the total control system.

23. DEPLOYMENT OF QUALIFIED, CERTIFIED EXPERIENCE ENGINEER & SUPERVISOR AT SITE.

The contractor shall deploy all the time qualified certified min 10 years experienced Electrical Engineer and Mechanical Engineer for works like Fire and water supply engineers for each service & Two supervisors having electrical supervisor license and min 05 Years experience for each services. It is mandatory to furnish the technical man power deployment at site in details along with tender.

AND WHEREAS____is hereby authorized to initial and sign all the documents pertaining to the contract on behalf ofChief Construction Engineer (R&D).

IN WITNESS THEREOF, the Chief Construction Engineer (R&D) Estates South, Defence Research & Development Organisation, Chandrayangutta, Kesavagiri Post, Hyderabad – 500 005 has serve his handfor and on behalf of President of India.

AND

_____for and on behalf of “_____” has affixed his signature and the seal of the said company in accordance with the Article s of Association .

SIGNED AND DELIVERED BY

SIGNED AND DELIVERED BY

SIGNATURE AND ADDRESS
OF FIRM

(_____)
CHIEF CONSTRUCTION ENGINEER
(R&D) ESTATES SOUTH
ACCEPTING OFFICER
FOR ON BEHALF OF PRESIDENT OF
INDIA

Dated:_____

Dated:_____

WITNESS:

WITNESS:

1.

1.

2.

2.