

TENDER SPECIFICATION

BHEL:PSSR:SCT: 1278

FOR

Construction of 2 No Office Building of size 12 M x 32 M , 1 No Mess Building of size 5 X 8 M, 3 Nos closed stores building of size 15 M x 60 M, 4 Nos semi closed building of size 12 X 32 M Storage yard development, approach road, fencing and other connected civil works including Sewage, Water Supply and Electrical works.

at

BELLARY THERMAL POWER PROJECT 1 X 500 MW UNIT -II

(For M/s. KPCL)
Kudatini Village,
Bellary District, Karnataka State

PART - I TECHNICAL BID

BOOK NO :



BHARAT HEAVY ELECTRICALS LIMITED

(A Government of India Undertaking)

Power Sector – Southern Region

690, Anna Salai, Nandanam, Chennai – 600 035.

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Drawings :

- 1. Store shed 60 M x 15 M - 1-BHE/SR /CVL /06/00**
- 2. Semi closed Shed 32M x 12 M – 1 –BHE /SR /CVL /08/00**
- 3. Office Building 32 M x 12 M – 1 –BHE/SR /CVL/01/00**
- 4. Mess Building 8M x 5 M – 1-BHE/SR/CVL/13/00**
- 5. GA of septic tank – 1-BHE/SR /CVL/04/00**
- 6. Typical details of internal partition – 3-BHE/SR/TYP/08**
- 7. Typical details of barbed wire fence- 3-BHE/SR/TYP/08**
- 8. Roof truss -15 m span- 1-BHE/SR/CVL/07/00**
- 9. Roof truss 12 M span – 1 BHE/SR/CVL/02/00**

BHARAT HEAVY ELECTRICALS LIMITED
(A Government of India Undertaking)
Power Sector, Southern Region
690, Anna Salai, Nandanam, Chennai – 35

Tender Specification No. BHEL:PSSR:SCT: 1278

Messrs

Date :

Dear Sir,

Sub: Construction of 2 No Office Building of size 12 M x 32 M , 1 No Mess Building of size 5 X 8 M, 3 Nos closed stores building of size 15 M x 60 M, 4 Nos semi closed building of size 12 X 32 M Storage yard development, approach road, fencing and other connected civil works including Sewage, Water Supply and Electrical works Unit – II 1 x 500 MW set at Bellary Thermal Power Project (M/s KPCL) , Kudatini Village, Bellary District , Karnataka State .

Please find enclosed one set of non-transferable tender documents containing - 70 - pages of Tender Specification Booklet for the above work.

You are requested to go through the tender documents and offer your most competitive rate and submit the tender documents duly filled in as per procedure indicated in the tender specification along with requisite EMD of Rs.2,00,000/- (Rupees Two Lakh only) in the form of Demand Draft drawn in favour of M/s.Bharat Heavy Electrical Limited Chennai - 35. Bids with Deviations from the tender conditions will be rejected.

A SEPARATE LETTER SHALL BE FURNISHED INDICATING THAT THERE ARE NO DEVIATIONS FROM THE TENDER CONDITIONS(As in Page 8.)

The completed quotations shall reach the office of the under signed on or before **4.2.08** at **15.00** Hrs. The Technical bids, will be opened on the same day at **15.30** hrs. We shall separately intimate the date for opening the price bids only to those parties who are technically qualified. You are requested to depute your authorized representative at the time of opening.

ANY REVISION OF RATES / PRICES WHATSOEVER AFTER THE TIME AND DATE MENTIONED IN TENDER SPECIFICATION FOR SUBMISSION OF COMPLETED QUOTATIONS SHALL NOT BE ENTERTAINED UNLESS CALLED FOR SPECIFICALLY BY BHEL.

Kindly acknowledge the receipt of the tender documents and confirm your participation.

Kindly note that BHEL reserves the right to reject any or all tenders without assigning any reason.

Thanking you,

Yours faithfully,

For and on behalf of
BHARAT HEAVY ELECTRICALS LIMITED

ADDITIONAL GENERAL MANAGER / CONTRACTS

This Tender document is not transferable.

Place : Chennai -35

Encl: One set of Tender documents with GCC Booklet and Drawings

BHARAT HEAVY ELECTRICALS LIMITED
(A Government of India undertaking)
Power Sector : Southern Region
690, Anna Salai, Nandanam, Chennai – 600 035.

SPECIAL INSTRUCTIONS TO BIDDERS

The Bidder must submit their bids as requested in a sealed cover prominently superscribing the Tender Specification number, due date and time of submission as mentioned in the **TENDER NOTICE**.

The following information shall be furnished by the Bidder along with their offer (Technical Bid cover)

01. Details of previous experience during the last seven years indicating contract value, duration, completion period and present engagement as per G.C.C.
02. Organisation structure of the Company as per GCC.
03. Financial status of the firm enclosing balance sheet and profit and loss account for the past 3 years and certificate from the Company's Banker as per G.C.C
04. Turnover of the Company in last 3 Financial years pertaining to this scope of work only.
05. Latest Income Tax clearance certificate.
06. BIO DATA of key personnel presently in the Rolls of the company and proposed site organization for carrying out the work including deployment of Engineers and Supervisors.
07. Declaration sheets as per Appendix of Tender Specification.
08. Checklist and Schedule of General particulars as per Appendix in GCC.
09. T & P owned/deployment details as per G.C.C.
10. Technical manpower deployment details as per G.C.C

11. Other relevant details as per GCC and checklist.
12. **THE BIDDERS ARE REQUESTED TO FURNISH THE DOCUMENTS LIKE COPIES OF LOI'S, WORK ORDER'S ETC PERTAINING TO THE EXPERIENCE INDICATED IN QUALIFYING REQUIREMENTS, AS GIVEN BELOW.**

13. QUALIFICATION REQUIREMENT

- a) The bidders should have experience in construction of buildings / roads / fencing or any other civil works in last seven years.
- b) The bidders should have a minimum average financial turn over of **Rs. 2.17 Cr** per year in the preceding three financial years ending 31st March 2007.

The Bidder must have earned profit in any one of the last three financial years ending 31.03.2007 and should have positive net worth as on 31.03.2007.

Bidder should submit audited balance sheet and profit & loss account of the company with related schedules for last three years ending 31.03.2007 in support of above requirement.

- c) Notwithstanding the above, BHEL reserves the right to reject any Tender or all the Tenders for reasons whatsoever beyond our control and the decision of BHEL is final.

LD / Penalty shall be leviable as per the applicable clauses of GCC.

14. TENDERERS HAVE TO FURNISH A DECLARATION SHEET INDICATING THAT THERE IS NO DEVIATION FROM THE TENDER DOCUMENTS (AS IN PAGE 8). TENDERERS MAY FURTHER NOTE THAT THIS DECLARATION IS A PREREQUISITE FOR BHEL TO CONSIDER THEIR BIDS. BIDS SUBMITTED WITHOUT **"NO DEVIATION DECLARATION"** WILL BE REJECTED BY BHEL.

15. SAFETY PLAN

Bidder may further note that the submission of safety plan is a prerequisite for BHEL to consider their bids.

BHEL : PSSR : CONTRACTS
PROCEDURE FOR SUBMISSION OF SEALED BIDS

The Tenderers must submit their bids as required in two parts in separate sealed covers prominently superscribed as Part I "Technical Bid" and Part II "Price Bid" and also indicating on each of the covers the tender specification number and due date and time as mentioned in the Tender Notice.

Part I (Technical Bid) Cover I

Excepting Rate Schedule, all other schedules, data sheets and details called for in the specification shall be enclosed, in part I Technical Bid only.

Part II (Price Bid) Cover II

All indications of price shall be given in this part II Price Bid.

Tenderers are requested to quote their rates, only in the price bid (part II) provided by BHEL. Quoting of rates in any other form / formats will not be entertained.

These two separate cover I & II (Part I and Part II) shall together be enclosed in a third envelope (Cover III) along with requisite EMD as indicated and this sealed cover shall be superscribed and submitted to Senior Deputy General Manager/Contracts at the above mentioned address before the due date as indicated. The Tenderers will be intimated separately in case any clarifications are required.

NOTE:

Tenderers are issued with 2 Nos. of Technical Bids, 2 Nos. of Price Bids and 2 Nos. of GCC booklet., out of which one set of each document shall be retained by them for their reference. Balance one set shall be submitted along with their offer as per procedure indicated above.

EMD amount for this Tender is Rs.2,00,000/- (Rupees TwoLakhs only). This EMD amount shall be submitted in the form of either pay order or demand draft only drawn in favour of M/s. Bharat Heavy Electricals Limited, Chennai – 35. EMD amount in the form of Bank Guarantee / fixed deposit receipt or in any other form will not be Accepted

ANY REVISION OF RATES / PRICES WHAT SO EVER AFTER THE TIME AND DATE MENTIONED IN TENDER SPECIFICATION FOR SUBMISSION OF COMPLETED QUOTATIONS SHALL NOT BE ENTERTAINED UNLESS CALLED FOR SPECIFICALLY BY BHEL.

Additional General Manager/Contracts.

BHARAT HEAVY ELECTRICALS LIMITED

(A Government of India Undertaking)

Power Sector, Southern Region

690, Anna Salai, Nandanam, Chennai – 35

TENDER NOTICE

Tender Specification No. BHEL:PSSR:SCT:1278

Description	EMD
Construction of 2 No Office Building of size 12 M x 32 M , 1 No Mess Building of size 5 X 8 M, 3 Nos closed stores building of size 15 M X 60 M, 4 Nos semi closed building of size 12 X 32M Storage Yard development, approach road,fencing and other connected civil works including Sewage, Water Supply and Electrical works Unit II – 1 x 500 MW set at Bellary Thermal Power Project (M/s KPCL) , Kudatini Village, Bellary District , Karnataka State .	Rs 2 Lakhs

Cost of Tender Documents (Including all Taxes)	:	Rs.1040 /-	
Sale Starts on	:	14.01.08	
Sale closes on	:	02.02.08	
Due date and Time for Submission	:	04.02.08	15.00 Hrs.
Date and time for opening Of Technical Bids	:	04.02.08	15.30 Hrs

QUALIFICATION REQUIREMENT

a) The bidders should have experience in construction of buildings / roads / fencing or any other civil works in last seven years.

b) The bidders should have a minimum average financial turn over of **Rs 2.17 Cr** per year in the preceding three years ending 31st March 2007.

The Bidder must have earned profit in any one of the last three financial years ending 31.03.2007 and should have positive net worth as on 31.03.2007.

Bidder should submit audited balance sheet and profit & loss account of the company with related schedules for last three years ending 31.03.2007 in support of above requirement.

c) Notwithstanding the above, BHEL reserves the right to reject any Tender or all the Tenders for reasons whatsoever beyond our control and the decision of BHEL is final.

LD / Penalty shall be leviable as per the applicable clauses of GCC.

Interested parties can get the Tender documents from the office of the Senior Deputy General Manager / Contracts on all working days by remitting the cost of tender documents either by Cash or A/c Payee Demand Draft drawn in favour of M/s. Bharat Heavy Electricals Limited, Chennai – 600 035. Money order, Cheques and Postal Orders will not be accepted.

The Bharat Heavy Electricals Limited takes no responsibility for any delay, loss or non-receipt of tender documents sent by post and also reserves the right to reject any or all the tender without assigning any reason therefor. **TENDER NOT ACCOMPANIED BY THE PRESCRIBED EARNEST MONEY DEPOSIT ARE LIABLE TO BE SUMMARILY REJECTED.**

Additional General Manager/Contracts

TENDER SPECIFICATION : BHEL:PSSR;SCT:1278

CERTIFICATE FOR NO DEVIATION

I, _____ of

M/s _____

hereby certify that there is no deviation from the Tender conditions either technical or commercial and I am agreeing to all the terms and conditions mentioned in the Tender Specification.

SIGNATURE OF THE TENDERER

OFFER OF CONTRACTOR

Additional General Manager/ Contracts
Bharat Heavy Electricals Limited,
Power Sector : Southern Region
690, Anna Salai,
Nandanam,
Chennai – 600 035.

Sir,

I/We hereby offer to carry out the work detailed in Tender Specification No. **BHEL:PSSR:SCT:1278** issued by Bharat Heavy Electricals Limited, Power Sector : Southern Region, in accordance with the terms and conditions thereof.

I/We have carefully perused the following documents connected with the above work and agree to abide by the same.

1. Instructions to Tenderer
2. General Conditions of Contract
3. Special conditions of Contract
4. Other Section, Appendices and Schedules

I/We have deposited/forwarded herewith the Earnest Money Deposit/a sum of Rs.2,00,000/- (Rupees Two Lakhs only) vide DD.No. _____ Dt. _____ which shall be refunded should our offer not be accepted. Should our offer be accepted, I/We further agree to deposit such additional sum which along with the sum of Rs.2,00,000/- (Rupees Two Lakhs only) mentioned above, to make up the Security Deposit for the work as provided for in the Tender Specification within the stipulated time as may be indicated by BHEL, Power Sector : Southern Region, Chennai – 600 035.

I/We further agree to execute all the works referred to in the said documents upon the terms and conditions obtained or referred to therein and as detailed in the appendices annexed thereto.

DATE:

CONTRACTOR:

PLACE:

ADDRESS:

Witness with their address

Signature

Name

Address

PROJECT INFORMATION

BELLARY THERMAL POWER PROJECT

- 1.0 Owner : Karnataka Power Corporation Ltd.,
Shakthi Bhavan
No.82, Race Course Road
Bangalore – 560 001
Karnataka, India
- 2.0 Consultant : M/s.Fischtener Consulting Engineers
Chennai
- 3.0 Project Title : 1 x 500 MW Bellary Thermal Power
Station, Stage – I, Unit No 1
- 4.0 Location : Kudatini Village
Bellary Dist
Karnataka State
India.
- 5.0 Latitude and Longitude : 15⁰ 11' 58" N Latitude
76⁰ 43' 23" E Longitude
- 6.0 Elevation above mean sea level : 478 meters
- 7.0 Climatic Conditions

(a) Temperature

i) Monthly basis

Mean of daily maximum temperature : 42.5⁰ C (in the month of April)

Mean of daily Minimum temperature : 19.5⁰ C (in the month of Dec)

ii) Monthly basis

Mean of daily Maximum : 37.5⁰C

Mean of daily Minimum : 19.5⁰C

iii) Highest temperature recorded : 42.5⁰C

- iv) Lowest temperature recorded : 14.6⁰C
- (b) Relative Humidity : Varies between 11% and 70%
- (c) Rainfall
Annual average rain : 492 to 846 mm most of which
Occurs during August to October
- (d) Wind Speed
 - i) Annual mean wind speed : 8.4 km / hr
 - ii) Maximum mean wind speed : 19 km / hr in the month of July.

8.0 Wind Load

Calculations for wind effect shall be in accordance with IS:875-1987 (Part-3) taking into account the following:

- (a) Basic wind speed of 39 m/sec as given in fig.1 of the code.
- (b) Factor K1 shall be taken as 1.06
- (c) Terrain category shall be 2 and corresponding values shall be taken for K2
- (d) Factor K3 shall be taken as 1.0

9.0 Wind Loading for Stack

- (a) For wind pressure as per clause 8.0 above
- (b) For RC stacks as per IS: 4998

10.0 Seismic data (as per IS: 1893 latest issue)

- (a) Zone : Zone III
- (b) Importance factor (I) : 2.5 for electrical equipment 1.5 for others.

- 11.0 Auxiliary power supply : Auxiliary electrical equipment to be supplied against this specification shall

be suitable for operation on the following supply system.

- (a) For motors rated above 175 kW : 11000V, 3 phase, 3 wire, 50Hz medium earthed AC
3300V, 3 phase, 3 wire, 50Hz medium earthed AC
- (b) For motor control center : 415V, 3 phase, 3 wire solidly earthed AC
- (c) For motor rated 175 kW and below : 415, 3 phase, 3 wire solidly earthed AC
- (d) DC motor starters, DC solenoids, DC alarm, control and protections : 220 V DC, 2 wire, unearthed DC
- (e) AC control & protective devices : 110 V 1 phase, 50Hz, 2 wire AC supply. The single-phase 110V AC supply shall be derived by CONTRACTOR BY PROVIDING 415V/110V control transformers of adequate rating with MCCB / MCB on both the primary and secondary sides.
- (f) Uninterrupted power Supply : 230 V, 1 phase, 50Hz, 2 wire AC supply from UPS system for I & C (including indicator recorders) and UCMS only.
- (g) AC solenoids, Indicators / recorders, space Heaters (for motors rated 30 KW and above) : 240 V 1 phase, 2 wire, 50Hz AC system with effectively earthed neutral. The power supply shall be derived by CONTRACTOR by providing 415V / 240V transformer of adequate rating with MCCB/MCB on primary / secondary sides.
- (h) Winding heating of motors below 30kW : 24 V 1 phase, 50Hz, AC with one point earthed. This shall be derived by CONTRACTOR by providing 415 V 3 phase, 3 wire, AC supply through an adequately rated stepdown transformer of adequate rating with MCCB / MCB on primary / secondary sides.
- (i) Solid state controls (including solenoid) : 24 V DC, 2 wire, supply from UPS for instrumentation system only.

Section III

Common Conditions of Contract

3.1 SCOPE OF CONTRACT

- 3.1.1 The Contractor shall carry out the work in accordance with instructions/drawings/specifications/standard
- 3.1.2 Provisions of all types of labour, supervisors, watch and ward as required, tools and tackles as required consumables as required under various clauses of Tender Specifications.
- 3.1.3 Completion of work in time
- 3.1.4 Good quality and accurate workmanship.

3.2 FACILITIES TO BE PROVIDED BY BHEL

- 3.2.1 Open space for construction of temporary office & storage shed will be provided by BHEL and contractor has to make his own arrangements for his labour tenements.

3.2.2 ELECTRICITY

For construction purpose, Electricity will be provided free of charge at single point. Further distribution shall be arranged by the contractor for the site requirement at his cost. However the initial power supply to be arranged by the contractor for a period of one month from the start of work at their cost till BHEL makes arrangement.

The required power generating sets (DG Sets) with fuel and other consumables shall be arranged by the contractor at his cost, and the operation and maintenance of the same shall be borne by the contractor.

3.2.3 BHEL is not responsible for any loss or damage to the contractor's equipment as a result of variation in Voltage / frequency or interruptions in power supply.

3.2.4 WATER

For Construction and drinking purpose water will be provided at one single point free of charge as provided by customer to BHEL. Further distribution shall be arranged by the contractor at his cost. However, initial water supply will be arranged by contractor for a period of one month from the start of work at their cost till BHEL makes arrangement. Contractor has to provide / arrange for sufficient required quantum of water for continuous operation without any stoppage. The required water storage containers shall be arranged at the site by the contractor. Water should not be a shortage for construction purposes and as well as for curing. No structure should get damaged because of lack of curing. Any damage caused because of this, BHEL decision in charging a lump sum amount deduction is final. Contractor has to put enough number of people for curing as decided by the BHEL Engineer. Decision of BHEL Engineer is final.

3.2.5 TOOLS & TACKLES

BHEL will not provide any tools and plants for the execution of this work. The contractor shall provide tools, plants at his cost.

3.2.6 MATERIALS

All the materials that are necessary for the satisfactory completion of work including cement, reinforcement steel, structural steel, aggregates etc shall have to be arranged by the contractor at his own cost.

3.2.7 CONSUMABLES:

All the necessary consumables that are necessary for the satisfactory completion of work including oxygen/Acetylene, electrodes etc. shall have to be arranged by the contractor at his cost.

3.3 FACILITIES TO BE PROVIDED AND DEVELOPED BY THE CONTRACTOR AT HIS COST.

- 3.3.1 It shall be the responsibility of the contractor to construct his own office shed, with all facilities like electricity, water supply, sanitary arrangements in the area allotted to him for the purpose.
- 3.3.2 Distribution of water for construction purpose by arranging storing sumps or tankers and as well as drinking purposes, shall be contractor's responsibility and at his cost.
- 3.3.3 Provision and distribution of electrical power to the required places with proper distribution boards approved cables and cable laying including supply of all materials like cables, switch boards, pipes etc., observing the safety rules laid down by electrical authority of the State/BHEL/their customer with appropriate statutory/requirement.
- 3.3.4 Adequate lighting facilities such as flood lamps and hand lamps and area lightings shall be arranged by the contractor at the site of construction, contractor's material storage area, etc., at his cost.
- 3.3.5 On completion of work, all the temporary buildings, structures, pipelines, cables etc., shall be dismantled and leveled and debris shall be removed as per instructions of BHEL by the Contractor at his cost. In the event of his failure to do so, the expenditure towards the clearance of the same will be recovered from the contractor. The decision of BHEL Engineer in this regard is final.

3.4 SUPERVISORY STAFF AND LABOUR

- 3.4.1 The contractor shall engage all the unskilled and specially skilled labour including brick masons, carpenters, plumbers, electricians, fabricators and fitters etc., and supervisory staff. Only trained and competent personnel with previous experience in the job shall be employed. However, BHEL reserves the right to decide on the suitability of the workers and other personnel who will be employed by the contractor.

BHEL reserves the right to insist on removal of any employee of the contractor at any time, if found unsuitable, the contractor shall remove him immediately.

- 3.4.2 All the materials like steel bars, steel wires, steel Pipes, Steel Flats, bricks, cement, sand, doors & windows for office shed, painting materials, putty, glazing tiles etc., shall be arranged by the contractor as per the specification mentioned in Tender/Indian standard specification. The contractor is required to quote item rates for construction of office shed, Storage shed, civil and electrical works inclusive of cost of materials, labour etc. BHEL reserves the right to inspect and reject any material/work not found satisfactory.

3.5 GENERAL

- 3.5.1 During execution of the job, it is very essential that proper and adequate inspection should be made constantly by the contractor to maintain quality of workmanship and to ensure that deviations from the BHEL drawings not exceed the permissible limits, which shall be approved by BHEL.
- 3.5.2 The contractor shall visit the site and ascertain the local conditions, entry and traffic restrictions, all construction in the area and also ascertain all site conditions and particularly the sub soil conditions etc. The contractor shall allow for extras likely to be incurred due to such condition and no extra claim shall be entertained on this account under any circumstances from the contractor.
- 3.5.3 The contractor shall provide and maintain at his own cost pumps and other equipment to keep the works free from water and continue to do so until handing over of the work. The contractor shall clear all trees, rubbish, vegetation, rod, brickbats etc., and dispose them suitably in allotted areas at his own cost.
- 3.5.4 The contractor shall take adequate precautions to ensure complete safety and prevention of accidents at site. The safety precautions shall conform to IS codes wherever applicable.

- 3.5.5 The contractor shall level the site in accordance with the sequence of earth levelling as shown in the drawings or as directed by the Engineer at his own cost.
- 3.5.6 Wherever blasting is essential the contractor has to carry out the same at his own cost.
- 3.5.7 The items though not specifically mentioned either in the drawings or in the tender specifications/rate schedule but are needed to complete the construction of office cum storage shed as stipulated under the specifications are also to be erected to entire satisfaction of BHEL Engineer and as per IS specification.
- 3.5.8 The detailed drawings and specifications will form part of the tender documents. BHEL reserves the right to modify/alter the tender drawings, if necessary and the price will remain firm as per item rates quoted.
- 3.5.9 The contractor shall submit the labour and staff strength (skill wise) details to Engineer in charge every month and promptly notify whenever variation occurs.

3.6.0 PROGRESS OF WORK

During the course of erection, if the progress is found unsatisfactory or if the target dates fixed from time to time for every milestone are to be advanced, or in the opinion of BHEL, if it is found that the skilled workman like, Masons, Carpenters, Electricians etc., employed are not sufficient, BHEL will induct required additional workmen to improve the progress and recover from the contractors bills, all charges incurred on this account including all expenses together with BHEL overheads.

The progress reports shall indicate the progress achieved against planned with reasons indicating delays if any, shall also furnish in detail the reason for the same and shall give remedial action which the contractor intends to take to make good the slippage on lost time, so that further works can proceed as per the original programme and the slippage do not accumulate and affect the overall programme.

The contractor shall submit daily, weekly and monthly progress reports, manpower reports, material reports, consumables report and other reports considered necessary by the engineer.

The manpower reports shall clearly indicate the manpower deployed category-wise daily, specifying also the activities in which they are engaged. The periodicity of the reports will be decided by BHEL engineer at site.

The contractor shall arrange for weekly progress review meetings with engineer at site during which actual progress during the week vis-à-vis scheduled programme shall be discussed for action to be taken for achieving targets. The programme for subsequent week shall also be presented by contractor for discussions. The contractor shall constantly update/revise his work programme to meet the overall requirement and suit the material availability.

The contractor shall submit detailed monthly plan after discussion with BHEL Engineer and the same has to be forwarded by the first week of the month (working month or calendar month).

3.7.0 SAFETY

- a. T & P used by contractor should be tested quality bearing ISI marks. Necessary test certificates to be produced by the contractor for all the T & P received by him at site for acceptance by BHEL Engineer. BHEL will reject any T & P without IS test certificate and the same cannot be utilized on job.
- b. Only trained and experienced personnel to be used on the job. Signaling for rigging operations must be given by workers who are possessing required skill and experience in handling materials.

3.8.0 Contractor shall strictly follow all safety conditions as per Clause 2.15 and its sub clauses of G.C.C. Booklet.

3.9.0 Non-conformity of safety rules and safety appliances will be viewed seriously and the BHEL has right to impose fines on the contractors as under:

S.No	Safety	Fine (Rs)
01	Not wearing safety helmet	50/-
02	Not wearing safety belt	100/-
03	Grinding without goggles	50/-
04	Not using 24V supply for internal work	500/-
05	Electrical plugs not used for hand machines	100/-
06	Not slinging properly	200/-
07	Using damaged sling	200/-
08	Lifting cylinders without cage	500/-
09	Not using proper welding cable with lot of joints and not insulated properly	200/
10	Not removing small scrap from platforms	200/-
11	Gas cutting without taking proper precaution or not using sheet below gas cutting	200/-
12	Not maintaining elec. winches which are being operated dangerously	500/-
13	Improper earthing of electrical T & Ps	500/-

- 3.9.1 The contractor should exclusively deploy one safety Engineer along with a safety supervisor for effective implementation and coordination of safe working condition.
- 3.9.2 The contractor should submit the safety plan details as enclosed with the tender and scrupulously follow the same during the tenure of contract.

3.10. Specific Requirement for ISO 9001 - 2000

Important note

Contractor shall make all efforts that all their staff/employees are exposed to periodical training programme conducted by qualified agencies/personnel on ISO 9002 standards.

Contractor shall ensure that the quality is maintained in all the works connected with this contract at all stages to the requirement of BHEL.

Contractors shall ensure that all inspection, measuring and testing equipment that are used, whether owned by the contractors or used on loan, are calibrated by the authorized agencies and the valid calibration certificate will be available with team for verification by BHEL. A list of such instruments possessed by contractor at site with its calibration status is to be submitted to BHEL Engineer for verification and on demand.

Contractor shall arrange for the inspection of the works at various stages as required by BHEL. Immediate corrective action shall be taken by the contractors for the non conformances, if any, observed and pointed out by BHEL and records updated.

HSE SPECIFIC REQUIREMENT

OCCUPATIONAL HEALTH & SAFETY MANAGEMENT SYSTEM

SUB CONTRACTOR TO ENSURE COMPLIANCE OF THE FOLLOWING HEALTH RELATED POINTS

01. Sub-contractor to identify nearest hospital for Health check up of his staff and workers and intimate BHEL site office & PSSR HQ.
02. To arrange for occupational health check up / screening of contractor's staff and workers engaged in sub contracting activities. In this, category of workmen such as welders, gas cutters, grinders, radiographers, crane operators are to be given exclusive attention in respect of health screening.
03. Sub-contractor to arrange an ambulance vehicle or emergency vehicle on a continuous basis to meet any emergency situation arising at site work in which his staff and workers are engaged.
04. To provide appropriate facilities for prompt first aid treatment of injuries and illness at work. One first Aider for each sub contractor to be provided. First Aider should undergo training on first aid.
05. To provide filtered drinking water at selected place in a clean container.

SUB CONTRACTOR TO ENSURE COMPLIANCE OF THE FOLLOWING SAFETY RELATED POINTS

01. Personnel Protective Equipment (**PPEs**): Required number of following PPEs (Confirming to Relevant IS Standards) to be made available to workmen at site and ensure that they are used .
 - ❑ Helmet
 - ❑ Safety goggles
 - ❑ Welding face shields
 - ❑ Safety belts for working at heights
 - ❑ Safety shoes
 - ❑ Ear plugs
 - ❑ Rubber gloves and mats for low tension (L.T) electrical works
 - ❑ Gum boots & aprons
 - ❑ Other items as required by BHEL site
 - ❑ Hand cloves

02. Sub contractor to liaise with nearest fire station and inform contact telephone number and contact person to meet any emergency.
03. To provide appropriate fire fighting equipment at designated work place and to provide fire fighting training to selected persons in his group of workmen to meet emergencies.
04. To provide adequate number of 24 V power supply points to work in a constrained and enclosed space.
- 05 . All power tapping points / switch boards /power & control cabling should fulfill required electrical safety aspects as per relevant IS standard.
- 06 ELCB's (Earth leak circuit breakers) at all electrical distribution points to be provided.
07. Red and white caution tape of proper width (1.5 to 2 inch) to be used for cordoning unsafe area such as open trench, excavated area, etc.
08. To provide sub-contractors company logo or clothing to all staff and workers for identification including identity cards with photographs approved by BHEL.
09. High pressure and structural welders to be identified with colour clothing and to display copy of welders certificate with photographs of welder at the work place. They also should be in possession of valid welding procedure.
10. To display safe handling procedure for all chemicals such as lube oil, grease, sealing compound, kerosene, diesel etc. at stores & respective work place.
11. Contractor should authorize a person at site to stop work if there is a unsafe work noticed, as per his knowledge.
12. Fitness for use of erected scaffolding to be certified by the contractors approved scaffolder and the certificate should be displayed on the scaffolding itself. If the scaffolding is unsafe , the same will not be used. the certificate to be updated daily. The scaffolding to be made as per the relevant IS standard.

13. For making platform on the scaffolding , proper thickness and size of the plank of required quality wood to be used. The safe working load of the platform to be displayed on the scaffolding itself. Proper use of platform to be explained to the user.
14. All plant equipment should have inspection report before put in to use.
15. All T&Ps should be of reputed brand and having quality certificates..
16. All IMTEs should have valid calibration certificate from recommended institution / testing lab and these should be in place.
17. All lifting tackle and plant equipment should have safe working load certificate.
18. The right worker should be deployed for right job and the resume of site in charge, supervisors, and key workers to be submitted before commencement of work.
19. Sub-contractor should submit inspection / testing matrix of all T&Ps and to be approved by BHEL.
20. Sub-contractor to display safety slogan, safety board, caution boards wherever required in consultation with BHEL.
21. Sub-contractor to provide gas detectors of reputed make at desired locations.
22. Sub-contractor to conduct emergency mock drills. one drill per 6 month and submit report to BHEL.
- 23. Safe handling and storing of all equipment with adequate space to be ensured.**
24. Sub contractor to deploy safety supervisor till the completion of the project.

25. Sub contractor to comply the safety reporting procedure of BHEL as practiced at present and also additional requirements that may arise out of future improvements in the safety management system. This includes computation of safety indices such as frequency rate, severity rate & incident rate.
26. Sub contractor to identify probable emergency situations such as electric shocks to workmen , caving in of shored earth , fall from height, collapse of scaffolding fire etc., and should have clear action plan to overcome them. Sub contractor to take required guidance from BHEL in this regard.
27. Sub contractor to identify hazardous activities which he may carryout and should train his workmen in those activities with the relevant operation control procedures. Sub contractor to take required guidance from BHEL in this regard.
28. Safe work permit system to be followed while working in confined space / near electric systems.

SUB CONTRACTOR TO ENSURE COMPLIANCE OF THE FOLLOWING ENVIRONMENT RELATED POINTS

1. **HOUSE KEEPING** : Sub contractor to carry out daily house keeping of work areas / stores through a check list prepared in consultation with BHEL.
2. Sub contractor shall adopt pollution prevention / reduce /control approach in all his site activities. this shall include:
 - a. Transporting of oil / chemicals from stores to site safely without causing spillage. In case of any spillage, the area shall be cleaned and the remnant spilled oil disposed off to a safe place, identified for such disposal.
 - b. To use required containers / cans / safety gadgets /appliances for transporting and for usage of oil / chemicals at site.
3. Sub contractor shall arrange for segregation / collection of scraps and dispose off to the identified place meant for scrap collection.
4. Sub contractor to adopt good erection practices / procedures with the objective of reduction of waste generation / rework

OTHER HSE REQUIREMENTS TO BE COMPLIED BY SUB CONTRACTOR

1. Sub contractor to clearly understand and accept the HSE policy of PSSR with a commitment to comply the requirements of the policy.
2. Sub contractors to arrange for daily meeting of their supervisors and work force before they disperse for their daily planned activities where in the relevant health, safety and environment aspects of the job and use of PPEs are explained
3. Sub contractor to conduct monthly HSE meeting (internal) and submit the report to BHEL.
4. HSE slogans to be displayed in a proper board – hoarding at designated places in consultation with BHEL.
5. Sub contractor to submit a structured programme for training & occupational Health Screening of their work force at site after the Award of LOI.

SECTION — VI

SPECIAL CONDITIONS OF CONTRACT

SCOPE OF WORK:

Construction of 2 No Office Building of size 12 M x 32 M , 1 No Mess Building of size 5 X 8 M, 3 Nos closed stores building of size 15 M x 60 M, 4 Nos semi closed building of size 12 X 32 M Storage yard development, approach road, fencing and other connected civil works including Sewage, Water Supply and Electrical works Unit – II 1 x 500 MW set at Bellary Thermal Power Project (M/s KPCL) , Kudatini Village, Bellary District , Karnataka State .

SPECIFICATIONS FOR CIVIL WORKS FOR OFFICE / STORES BUILDING.

1.0 GENERAL:

- 1.1 All works under this section, unless specified otherwise, shall confirm to the latest revisions of the relevant Indian Specifications. In case any particular aspect of work is not covered by Indian standards, other standard specification as may be specified by the Engineer incharge shall be followed.
- 1.2 The contractor shall carryout all the works in strict accordance with the approved drawings stamped "Released for Construction" and specification issued to him. **No deviation from the drawings will be allowed unless otherwise directed by the Engineer in charge in writing.**
- 1.3 All materials to be incorporated in the work for the construction, shall confirm to the relevant IS specifications unless stated otherwise and shall be of the quality approved by the Engineer.
- 1.4 The drawings are tentative and strictly for tender purpose only. Contractor should ensure/ascertain the stability, safety of the said work. Any modification from the said drawings, if

necessary as suggested by the contractor will have to be approved by BHEL in writing.

2.0 EARTHWORK EXCAVATION

- 2.1 Earth work excavation in all types of soil for foundations, trenches including the shoring, strutting, dewatering, filling around foundations and to grade, compaction of fills etc for the works covered under the scope of this contract.
- 2.2 The area to be excavated shall be cleared out of bush, rubbish and leveled up. During excavation, if blasting is required, controlled blasting can be permitted with the prior permission in writing.
- 2.3 Excavated material shall not be deposited within 1.5 M from the top edge of the excavation or within distance equal to the depth of excavation, whichever is higher.
- 2.4 If Contractor excavates beyond the specified depth, the over excavated portion shall be filled back only with 1:4:8 cement concrete and well compacted without any extra cost.
- 2.5 The excavated soil will be disposed off by using it for back filling or by either spreading at designated disposal area. All surplus materials from excavation shall be carried away from excavation side and dumped at dumping site selected by the Engineer.
- 2.6 The earth filling shall be carried out by cutting & removing by Mechanical means, transporting within Plant Building (or) from outside borrowed earth, Filling in layer, watering, compacting by Roller/Compactors to carry out construction works over the filling as per the direction of Engineer Incharge.
- 2.7 All work shall in general be executed as specified in IS 6313 part II for **ANTI TERMITE TREATMENT** and as per approved specification of the agency having special know-how for the job. All necessary work to ensure uniform distribution and proper penetration of treating solution shall be done according to the instruction of the Engineer. Soil treatment shall not be done when the soil is wet with rain or subsoil water. Once formed, the treated soil barrier shall not be disturbed.

- 2.8 Treatment of Column Pits, Wall Trenches, Basement Excavations, foundation and basements etc., may be either be fully enveloped by chemical barrier or the treatment may start 500 mm below ground level. The bottom surface and sides of excavation (up to a height of about 300mm) for column pits.
- 2.9 Wall trenches and basement shall be treated with chemicals at the rate of 5 litres / SQ.M of surface area. Backfills around columns walls etc., shall be treated at the rate of 15 litres / SQ.M. of the vertical surface. Chemical treatment shall be done in stages following the compaction of earth in layers. The treatment shall be carried out after the ramming operation is done by rodding the earth at 150mm centers close to the wall surface and spraying the chemicals in the specified dose.
- 2.10 Treatment of Top surface of plinth filling shall be done by holes 50mm to 75mm deep at 150mm centers both ways shall be made with crowbars on the surface of compacted plinth fill. Chemical emulsion at the rate of 5 liters / SQ.M. of surface shall be applied prior to laying soiling or sub-grade. Special care shall be taken to maintain continuity of the chemical barrier at the junction of vertical and horizontal surface.
- 2.11 Special care shall be taken for Treatment of Soil surrounding pipes and conduits at the points where pipes and conduits enter the building and the soil shall be treated for a distance of 150mm and a depth of 75mm at the point where they enter the building. Special attention shall be taken in Treatment of expansion joints and shall be treated in a manner approved by the Engineer.

3.0 CONCRETE:

- 3.1 All the concrete works under the scope of Contract will be done in accordance with the relevant IS standards. The plain cement concrete for the foundations will be of nominal mix like 1:4:8. The reinforced cement concrete will be of 1:2:4 mix unless otherwise specified.

- 3.2 The reinforcement shall conform to the latest revisions of IS specification. The bars will be used of deformed bars conforming to IS 1786. The cutting, bending and placing of the reinforcement will be as per the drawing and direction of Engineer-in-Charge.
- 3.3 The form work should be capable of carrying the dead load of the concrete, the reinforcements and the forces due to vibration.
- 3.4 The form work shall be designed by the Contractor and approved by the Engineer-in-Charge.
- 3.5 Curing shall be done for all the concrete works continuously. The form work will be removed after sufficient curing is done.

4.0 MASONARY WORK:

4.1 Random Rubble masonry:

The RR masonry in cement mortar 1:5 shall be done for the foundation as mentioned in the drawing.

4.2 Brick masonry:

Bricks used are of standard size as required or as directed by Engineer In charge. The brick work in cement mortar 1:6 shall be done for all the walls all around as shown in the drawing. The pillars will be made of brick work. All the partition works will also be made with brick work.

- 4.3 The plastering will be done over the brick masonry in cement mortar 1:6 of 12mm thick both for interior as well as external walls.

5.0 STRUCTURAL WORKS:

- 5.1 This specification covers the Roofing, structures for office cum storage shed.

- 5.2 The roofing structures shall cover tubular trusses, purlins, bottom tie runners, anchor plates, base plates and fixing bolts for trusses, asbestos corrugated cement sheets with "J" bolts etc. Any other item not specifically mentioned but required for completion of the structure shall be deemed to have been included in this specification. The Tubular Trusses, purlins, Bottom tie runners will be fabricated from raw materials by the tenderer as per the drawing and as directed by Engineer In charge to complete the work. The required base plate. Anchor bolt, GI 'J' bolt etc., are to be arranged by the contractor at his cost.
- 5.3 The trusses shall be of tubular steel welded construction fabricated in places of convenient length for transportation by truck and speedy erection at site. The base plates will be welded to the trusses for fixing the same on pillars. Necessary cleats or fixing plates shall be provided on the trusses, for holding the purlins and the bottom tie runners, all as shown in the fabrication drawing.
- 5.4 The purlins and bottom tie runners shall be of steel tubes of sizes shown in the drawing. Corrugated asbestos cement sheets shall be used for the roofing. The sheets shall be fixed to purlins with GI "J" bolts, cap washers, bitumen washers. Flat iron wind ties 32 x 5 mm flat shall be provided over the AC sheets for additional protection against wind storms, for all rows with in the Quoted Rates.

6.0 FALSE CEILING:

- 6.1 The work under this section shall include the supply and installation of suspended ceiling using insulation / acoustic boards / plain asbestos sheet, Aluminium panels, plaster of Paris boards, "prespex" etc., together with the suspension system as shown on drawing or specified in schedule with all materials, labour and equipments. The work shall also include providing of openings in the ceiling for lighting, Air conditioning diffuser etc., as shown on drawing or instructed by Engineer.
- 6.2 Suspension system shall consist of the grid supporting the ceiling panels, intermediate runner supports for the grid if any and hangers, wall angels, etc., required to suspend the grid or the runners for structural walls, slabs and beams or trusses

proved factory made hanging system as approved by the Engineer may be used.

- 6.3 All members of the suspension system shall be of sufficient strength and rigidity to carry the ceiling boards or sheets in a true and level plane without exceeding a deflection of $1/360$ th of their span. All joints in ceiling panels shall run straight and cross joint shall be at perfect right angles. Angle moulds where shown on drawings shall be securely fixed to walls / all drillings of structural concrete and installation of suitable anchoring device for installation including welding of the suspension system shall be included in the rate. All MS sections used for supports etc., shall be given one coat of synthetic enamel paint over a coat of red lead primer. All wood supports shall be painted with two coats of 'solignum' or other approved wood preservative before erection.
- 6.4 Aluminium grid ceiling shall be "Beadlock" as manufactured by W.A.Beardshell and Co or Ajit India Ltd., or approved equal, steel grid ceiling system shall be of "Jolly Snap Grid" as manufactured by Anil Hardboards Ltd., or approved equal. The contractor shall ensure that the frame to support the ceiling is designed for its structural strength to withstand the weight of the ceiling boards to be fixed, live load of 75 Kg/Sq.Cm and other loads such as that of air-conditioning ducts, grills, electrical wiring and lighting fixtures, thermal insulation etc., are as shown in the drawing. The contractor shall also submit a detailed drawings to show the grid work, sizes of grip members method of suspension position of openings, for air-conditioning and lighting, access doors etc., Angle cleats or other suitable fixing device shall be fixed to the structural beam or slab above for fixing of hangers Main runners shall be hung by M.S.flats, angle rods or 12g or heavier galvanized tie wire hangers at maximum 1.2M centers. Extra hangers shall be provided at light fixtures that are supported from the ceiling system. The spacing of main and cross runners shall be as shown on drawings. Turn buckles shall be provided in M.S. rods for adjustment in levels.
- 6.5 The cross tees shall intersect main runners in pattern shown on drawing and positively locked together with intersection clips. All perimeter areas shall have angle moldings fixed to vertical

wall surfaces and end trees shall rest on the molding, unless otherwise shown on drawings.

- 6.6 The Contractor shall provide necessary opening in the false ceiling for air conditioning, lighting and other fixtures. Additional framing if required, for the above openings shall be provided at no extra cost to the owner. Removable or hinged type inspection or access trip doors shall be provided at locations specified by the owner.
- 6.7 Ceiling panels shall be of best quality material in thickness and properties called for in the 'Schedule of Items'. The contractor shall submit test certificates to the Engineer for approval before bulk supply. The Ceiling panels may be of the following types manufactured by reputed manufacturers.
- a) Plaster of Paris boards
 - b) Expanded polystyrene insulation boards
 - c) Fiber insulation boards
 - d) Wood particle boards
 - e) Perforated Aluminium panels
 - f) Mineral wood ceiling tiles
 - g) Glass fiber reinforced polystyrene sheets
 - h) Flat asbestos sheet
- 6.8 Acrylic plastic sheets, translucent or figured glass sheets, moulded plastic louvers, etc., if used shall be from approved manufacturers and in thickness specified in schedule.
- 6.9 Installations of Ceiling panels shall be strictly as per manufacture's instruction. For exposed grid ceiling system, the hold down clips shall be used at the rate of minimum one per 1.2 meter of perimeter. These shall however be omitted in access panels which shall be located as per the instruction of Engineer.
- 6.10 For concealed grid ceiling system, tiles shall be fixed to the supporting grid in manner shown on drawing or as specified by the manufacturer, where V joints in tiles are called for in drawings, these shall be in true lines.

- 6.11 Where flush surface is required, the joint shall be filled with approved filler material and finished to give a neat uniform surface. Where shown on drawings and schedule of items, 6 mm thick cement:sand (1:3) plaster shall be applied on the under surface of ceiling boards and finished in a true and even surface without undulations suitable for subsequent painting. Special care shall be taken to neatly finish the ceiling at junctions with walls, light fixtures diffusers etc.

7.0 DOORS AND WINDOWS

- 7.1 The doors shutters shall be of flushdoor as specified in the item specifications. The door frame will be made of MS Angle as shown in the drawing. All the joints are made to true line and shape. All the fittings are to be provided as directed by Engineer.
- 7.2 The steel windows and ventilators are made of standard steel sections as per IS 1038. The glazing will be done as per standards and thickness will be 5 mm wire gauged glass.

8.0 PELMET:

This shall be checked for rigidly for fixing and adequate clearance of fixture. Pelmet shall be measured for length of different types enumerated in the schedule.

9.0 PAINTING & FINISHING :

- 9.1 All steel surfaces including ventilators, windows, grills, rolling shutter etc shall also be primed with approved steel primer (one coat) and two coats of approved enamel paint so as to achieve as even.
- 9.2 All the structural webbers shall be provided with two coats of anti rust red oxide primer paint after proper cleaning of the surface.
- 9.3 Three coats of white washing shall be provided uniformly on all wall surfaces of the shed as per IS specifications.

10.0 WATER SUPPLY & SANITATION :

- 10.1 Necessary sanitary and plumbing works shall be provided for Indian type water closet, urinals and with sufficient water taps and all connections with supply lines/septic tank shall be provided by the contractor in BHEL office shed as per drawing. The material used and the location etc shall be as per the directions of BHEL Engineer even though indicated in the drawing given with tender.
- 10.2 Wash basins, WCs and Urinal pans with water and drainage connections as per drawing enclosed shall be provided, suitable drainage facility shall be provided.
- 10.3 One number septic tank and casspool shall be provided by the contractor at the locations specified by BHEL complete in all respects as per the enclosed drawings.

11.0 ELECTRICAL INSTALLATION :

- 11.1 The electrical installation shall generally be carried in conformity with the requirements of the Indian Electricity Act 1910 as amended up to date and the Indian Electricity Rules 1956 framed there under and also the relevant regulations of the Electric Supply Authority concerned as well as IS 732-1963 (Revised).
- 11.2 Good workmanship is an essential requirement for compliance with the Rules in the Code.
- 11.3 The work shall be carried out under the direct supervision of the person holding a valid certificate of competency issued by the State Government concerned for the type of work involved.
- 11.4 All outdoor/external lamps shall have weather proof fittings of design approved by BHEL Engineer so as to effectively prevent the admission of moisture.

- 11.5 The distribution boards shall be located as near as possible to the centre of the load they are intended to control.
- 11.6 All main switches (unless otherwise specified elsewhere) shall be of metal clad enclosed pattern which shall be fixed at close proximity to the point of entry of supply.
- 11.7 Main and branch distribution shall be in accordance with IS 732-1963 Code of practice for electrical wiring installation.
- 11.8 PVC conduit wiring system should be adopted through out and all conduit pipe shall be conformity to the latest IS.
- 11.9 Approved and good quality wire with adequate current carrying capacity, voltage rating with proper insulation as per IS should be used for the entire electrical wiring/installation.
- 11.10 Mounting height of various equipments from FFL shall be as follows unless noted:
- | | | |
|---------------------------|---|---------|
| Lighting panel | - | 1200 mm |
| Lighting control switches | - | 1200 mm |
| Receptacles with switch | - | 500 mm |
- 11.11 However, this may vary according to site conditions and contractor to take prior approval of BHEL Engineers before fixing.
- 11.12 Individual lighting circuits inside the building shall be wired with 250/440 grade single core Aluminium conductor of 4 mm size and receptacle circuit shall be wired with 6 mm size Aluminium conductor standard PVC wires.
- 11.13 Lighting fixtures receptacles, switches, conduits junction boxes and ceiling fan shall be properly earthed by using 14 SWG GI wire.
- 11.14 Incoming cable to lighting panel shall be PVC Aluminium conductor armored cables.

- 11.15 Ceiling fan regulator, lighting control switches etc shall be mounted to suit the lay out and shall be flush mounted on the walls with good quality plastic/fiber, glass cover.
- 11.16 A separate neutral wire shall be provided for each phase wires.
- 11.17 Tenderer shall quote for unit price for all items listed in bill of materials, for both supply and installation and also quote for point wiring basis.
- 11.18 All lighting fitting shall be supplied with the specified lamps.
- 11.19 All the suspension conduit boxes shall be of GI.
- 11.20 Earth wire shall be run inside the PVC conduits.
- 11.21 The wiring shall be carried out in PVC conduits of maximum size of 19 mm dia and shall be of surface type.
- 11.22 The required number of lighting fitting such as fluorescent lamps and incandescent lamps are given in schedule.
- 11.23 The rate for supply of incandescent and fluorescent lamp shall include for suitable reflectors, suspension device starters, chokes, condensers as required.
- 11.24 The AC supply will be 430 V, 3 phase, 50 cycles. All the power plugs shall be segregated from the light points and wired in a separate circuit.

12.0 EARTHING:

- 12.1 All earthing systems shall be in accordance with IS 3043-1966; Code of practice of Earthing.
- 12.2 The installation and earthing shall generally be carried out in accordance with the Indian Electricity Rules, 1956 as amended from time to time and the relevant regulations of the Electricity Supply Authority concerned.
- 12.3 All plugs and sockets shall be of three pin type. One of the pins being connected to earth.

- 12.4 Bodies of all electrical appliance shall be earthed by the use of three pin plugs. The covers of the regulators, if of metallic construction, shall be earthed by means of separate earth wire. A separate earth wire shall be used for earthing these appliances.
- 12.5 All earth wires and earth-continuity conductors shall be of copper/galvanized iron. They shall be either standard or solid bars of flat rectangular strips and may be bare, provided, due care is taken to avoid corrosion and mechanical damage to it. Inter connections of earth continuity conductors and main branch earth wires shall be made in such a way that reliable and good electrical connections are permanently ensured.
- 12.6 The neutral conductors shall not be used as earth wire.
- 12.7 Welded, bolted and clamped joints only are permissible. For stranded conductor, sleeve connectors are permissible. Bolted connections and their screws shall be protected against any possible corrosion.
- 12.8 The path of the earth wire shall, as far as possible, be out of reach of any person and shall be visible for inspection.
- 12.9 The galvanized iron pipe electrodes shall not be smaller than 38 mm ID and shall not be less than 2.5M in length be embedded below permanent moisture level and shall be of one piece only without any joints.

13.0 PRICE ESCALATION :

- 13.1 The quoted/accepted rate has to be kept firm for the entire contractual period including total extended period if any and no claim for revision of rates is allowed under any circumstances.
- 13.2 However the contractor shall maintain sufficient work force and other resources required for completion of the job expeditiously for the entire contractual period including total extended period.

14.0 TIME SCHEDULE :

- 14.1 The contractor should complete Construction all the sheds including electrification and connected works in all respects within **Nine (9)** months from the actual commencement of work at site.
- 14.2 The contractor shall start the work within one week from the date of issue of Fax letter of intent.
- 14.3 The rates quoted shall remain firm throughout the contract period till the entire construction work is completed in all respects to the entire satisfaction of BHEL.
- 14.4 For the above purposes, the work under the specification will be deemed to be completed in all respects, only after successful handing over of the works to BHEL and certified so by BHEL Engineer.
- 14.5 During the tenure of contract, if BHEL is not satisfied with the progress of work, BHEL have the right to withdraw any portion of work / balance work and get the same done either directly employing their own personnel or through other agency at the risk & cost of the Contractor. The contractor shall not be entitled for any compensation whatsoever in this regard.

15.0 TERMS OF PAYMENT :

- 15.1 90% of the accepted item rate in the rate schedule shall be paid as certified by BHEL Engineer.
- 15.2 5% of the accepted item rate in the Rate Schedule shall be paid on the entire execution of work and completion of the same as envisaged in the tender documents duly certified by BHEL Engineer and on submission and acceptance of final bill.
- 15.3 Balance 5% of the accepted item rate in the rate schedule will be payable after expiry of **9** months after taking over of the entire scope of work by BHEL.

16.0 IMPORTANT CONDITIONS FOR PAYMENT :

It may be noted that the first running bill will be released only on production of the following.

- i. PF Regn. No.
- ii. Labour Licence No.
- iii. Workmen Insurance Policy No.
- iv. Un Qualified Acceptance to Detailed L.O.I.
- v. Initial 50% Security Deposit.
- vi. Rs. 100/- Stamp Paper for Preparation of contract agreement

17.0 SPECIAL CONDITIONS OF CONTRACT-GENERAL

1. The quantities indicated in the rate schedule are approximate and may vary depending on site conditions and any changes in design at the time of construction. The payment in unit rate will be made only based on actual measurement jointly taken at site and certified by BHEL Engineer. No extra claim due to variation in quantities will be entertained. Contractor to make a note of this and to quote accordingly.
2. The quantities of doors, windows, ventilators etc., indicated in the rate schedule may vary slightly due to site conditions and minor design changes at the time of constructions. However payment will be made for actual quantities erected at site and no additional claim will be entertained in this regard. Also some of the windows have to be fabricated/modified to provide AC and the rates quoted should be inclusive of the same. After fixing the AC, the gap all round to be closed to form a perfect seal by providing a thermo coal packing and furnished by fixing laminated sheets for aesthetic view.
3. Price quoted above shall include supply of all materials, their transport, storage and preservations.
4. BHEL reserves the right to reject materials of substandard/not conforming to IS Specifications purchased by the contractor.

5. For fluorescent fitting at appropriate safe height when will be decided at site during construction. Contractor to make a note of the same and quote accordingly.
6. Contractor to note that necessary scaffolding for doing any type of job including painting, electrical works etc., even if not specifically mentioned in the rate schedule is in the scope of the contractor.
7. All the electrical fittings, including bulbs, tube lights, flood lights etc., mentioned above shall carry IS markings on them and shall be subject to the approval of BHEL site Engineer prior to their installations and shall be as per make of materials schedule enclosed in Appendix. The contract shall be executed on "FIRM PRICE" basis with no escalations payable on any amount whatsoever rates quoted shall be for all leads, lifts, and heights.
8. Rates quoted shall be inclusive of supply of materials, like cement, sand, bricks, stone, aggregate, lime, jelly, iron and steel materials, all kinds of paints, materials for doors and windows, ventilators, all fittings electrical fittings and their accessories, wooden materials, reinforcement steel, screws, bolts, nuts, washers, 'J' bolts etc., etc., Necessary transport, loading unloading etc all shall be borne by the contractor. All tools and plants required consumables shall be provided by the contractor at his cost.
9. All electrical fittings like fans, Exhaust fans, Tube lights etc., shall be marked / identified with running serial numbers before handing over of the sheds, to enable BHEL to keep inventory of the fittings and for effective control.
10. The contractor is requested to take care of the following statutory clearance which are under the scope of contractor.

The contractor is also requested to refer clause 2.8 of G.C.C. booklet.

- a. Labour License
- b. Provident Fund
- c. Insurance for Bidder's scope of work
- d. Workmen compensation
- e. Local rules governing the works like Electrical Inspectorate etc. Factory Inspectorate.
- f. Professional Tax
- g. Safety Rules & Regulations
- h. Competent Authority approval for Installation works
- i. Employees State Insurance Scheme
- j. Sales Tax on work contract.

18.0 PROVIDENT FUND & MINIMUM WAGES :

You are required to extend the benefit of Provident Fund to the labour employed by you in connection with this contract as per the Employees Provident Fund and Miscellaneous Provisions Act 1952. For due implementation of the same, you are hereby required to get yourself registered with the Provident Fund authorities for the purpose of reconciliation of PF dues and furnish to us the code number allotted to you by the Provident Fund authorities within one month from the date of issue of this letter of intent. In case you are exempted from such remittance an attested copy of authority for such exemption is to be furnished. Please note that in the event of your failure to comply with the provisions of said Act, if recoveries therefore are enforced from payments due to us by the customer or paid to statutory authorities by us, such amount will be recovered from payments due to you.

The contractor shall ensure the payments of minimum labour wages to the workmen under him as per the rules applicable from time to time in the state.

The final bill amount would be released only on production of clearance certificate from PF/ESI and labour authorities as applicable.

19.0 **TAXES :**

19.1 **Value added Tax (VAT) for the works**

Price quoted shall be inclusive of VAT except service tax. In this civil works, as transfer of property in goods is involved, Works Contract Tax under VAT Act as applicable shall be included in the quoted price by the bidder. The bidder shall get registered with Karnataka State VAT authorities and the registration certificate shall be forwarded to BHEL immediately after commencement of work. In case the bidder had already registered under Karnataka State VAT, they must quote their registration Number and forward copy of Registration Certificate while submitting this tender. Deduction of VAT at source would be enforced from the running bills at the rates prescribed unless exemption certificate is produced from the concerned authorities. Tax invoice if required under the relevant State VAT Law shall be submitted along with other compliances as per Karnataka VAT Act. The bidder has to obtain VAT clearance certificate from the concerned authorities, for the completed project, and submit along with the final bill as one of the document for contract closure.

The bidder while quoting the total price including VAT, they shall specify (1) The value of VAT included in the total price (2) Rate of tax adopted and (3) On what value etc. as additional information along with price bid.

The bidder shall quote very competitive price after taking into consideration of above points.

19.2 SERVICE TAX

Price quoted shall be exclusive of Service Tax. The service tax as statutorily leviable and payable by the bidder under the provisions of service tax Law / Act shall be paid by BHEL as per bidder claim through various running bills. The bidder shall furnish proof of service tax registration with Central Excise Department specifying the name of services covered under this contract. Registration Certificate should also bear the endorsement for the premises from where the billing shall be done by the bidder on BHEL for this project. The bidder shall

obtain prior consent of BHEL before billing the service tax amount.

19.3 OTHER TAXES

Any other taxes and duties (except VAT & Service Tax) viz. Entry Tax, Octroi, Seigniorage, Licenses, Deposits, Royalty, Stamp Duty, other charges / levies, etc. prevailing / applicable on the date of opening of technical bids and any variation thereof during the tenure of the contract are in the scope of bidder. In case BHEL is forced to pay any such taxes, BHEL shall have the right to recover the same from the bidder either from running bills or otherwise as deemed fit.

19.4 NEW LEVIES & TAXES :

In case Government imposes any new levy / tax after award of the work during the tenure of the contract, BHEL shall reimburse the same at actuals on submission of documentary proof of payment subject to the satisfaction of BHEL that such new levy / tax is applicable to this contract.

19.5 STATUTORY VARIATIONS :

Statutory variations are applicable only in the cases of Value Added Tax and Service Tax. The changes implemented by the Central / State Government in the VAT Act / Service Tax during the tenure of the contract viz. increase / decrease in the rate of taxes, applicability, etc. and its impact on upward revision / downward revision shall be paid/ adjusted from the date of respective variation. The bidder shall give the benefit of downward revision in favour of BHEL. No other variations shall be allowed during the tenure of the contract including extended period, if any.

19.6 DIRECT TAXES

BHEL shall not be liable towards Income Tax of whatever nature including variations thereof arising out of this contract as well as tax liability of the bidder and their personnel. Deduction of tax at source at the prevailing rates shall be effected by BHEL before release of payment as a statutory obligation, unless exemption certificate is produced by the

bidder. TDS certificate will be issued by BHEL as per the provisions of Income Tax Act/Rules.

19.7 OTHER STATUTORY REQUIREMENTS

1. The Contractor shall submit a copy of Labour License obtained from the Licensing Officer (Form VI) u/r25 read with u/s 12 of Contract Labour (R&A) Act 1970 & rules and Valid WC Insurance copy or ESI Code (if applicable) and PF code no alongwith the first running bill.
2. The Contractor should ensure compliance of Sec 21 of Contract Labour (R&A) Act 1970 regarding responsibility for payment of Wages. Incase of "Non-compliance of Sec 21 or non-payment of wages" to the workmen before the expiry of wage period by the contractor, BHEL will reserve its right to pay the workmen under the orders of Appropriate authority at the risk and cost of the Contractor.
3. The contractor shall submit monthly running bills alongwith the copies of monthly wages (of the preceding month) u/r 78 (1) (a)(1) of Contract Labour Rules, copies of monthly return of PF contribution with remittance Challans under Employees Provident Fund Act 1952 and copy of renewed WC Insurance policy or copies of monthly return of ESI contribution with challans under ESI Act 1948 (if applicable) in respect of the workmen engaged by them.
4. The Contractor shall submit copies of Final Settlement statement of disbursal of retrenchment benefits on retrenchment of each workmen under I D Act 1948, copies of Form 6-A(Annual Return of PF Contribution) along with Copies of PF Contribution Card of each member under PF Act and copies of monthly return on ESI Contribution – Form 6 under ESI Act1948 (If applicable) to BHEL along with the Final Bill.
5. Incase of any dispute pending before the Appropriate authority under I D act 1948, WC Act 1923 or ESI Act 1948 and PF Act 1952, BHEL reserve the right to hold

such amounts from the final bills of the Contractor which will be released on submission of proof of settlement of issues from the appropriate authority under the act.

6. In case of any dispute prolonged/pending before the authority for the reasons not attributable to the contractor, BHEL reserves the right to release the final bill of the contractor on submission of Indemnity bond by the contractor indemnifying BHEL against any claims that may arise at a later date without prejudice to the rights of BHEL.

**SECTION – VII APPENDIX – I
MAKE OF MATERIALS TO BE USED**

Sno	Name of Material	Make
01	UG Cable	Siemens, ICC, Omega , Paragon, Gloster, Premier Make
02	Wiring Cables a) 3 / 1.04 (2.5 Sq mm) b) 7/ 2.04 (6.0 sq mm)	Crompton Heavy, ICC Paragon, Finolex, Omega, alind make
03	Switches – 5 Amps Single Pole (Flush type)	Anchor
04	Distribution Board	Teak Wood
05	Ceiling Rose	Anchor
06	Bulbs	Philips, GEC, Crompton
07	Shades	Ellora, White Opar
08	AC – Single Phase / Three Phase 10 Amps 50 Cycles Energy Meter	Remco, Simco
09	5 Amps 3 Pin CS Plug	Anchor
10	15 Amps 3 Pin CS Plug	Anchor
11	a) IC switch above 60 Amps	GEM, GEC, Crompton

Sno	Name of Material	Make
	b) IC Switch below 60 amps	
12	Tube light (Fluorescent with complete fittings)	Philips, Crompton, GEC
13	Pendent Holders or BH	Ellora, Khosala, standard,KE
14	Bulk Head Fittings	K – Lite
15	Fuse Units	Anchor, GEM, GEC
16	Screws	Steel screws should be used for all works. The particular make of the materials selected should be one and the same for all the blocks
17	Ceiling Fan	Usha, Orient, Crompton

NOTE:

All Electricals fittings like fans, Exhaust fans, tube lights etc., shall be marked/identified with running Serial Numbers before handing over of the sheds, to enable BHEL to KEEP inventory of the fittings and for effective control.

SECTION VII
APPENDIX – II
DECLARATION SHEET

I,

hereby certify that, all the information and data furnished by me with regard to this Tender Specification No.BHEL:PSSR:SCT:1278 are true and complete to the best of my knowledge. I have gone through the specifications, conditions, stipulations in detail and agree to comply with the requirements and intent specifications.

I further certify that I am duly authorized representative of the under mentioned tenderer and a valid power of Attorney to this effect is also enclosed.

TENDERER'S NAME & ADDRESS

AUTHORISED REPRESENTATIVE'S
SIGNATURE WITH NAME & ADDRESS

SECTION VII

APPENDIX – III

TENDER SPECIFICATION NO BHEL:PSSR:SCT:1278

**CERTIFICATE OF DECLARATION FOR CONFIRMING
KNOWLEDGE ON SITE CONDITIONS**

We,

hereby declare and confirm that we have visited the project site under subject, namely and acquired full knowledge and information about the site conditions. We further confirm that the above information is true and correct and we will not raise any claim of any nature due to lack of knowledge of site conditions.

TENDERER'S NAME AND ADDRESS

SIGNATURE OF AUTHORISED
REPRESENTATIVE WITH NAME & ADDRESS:

Place:

Date :

OFFICE SEAL

5. Whether the following details are furnished : YES/NO
- a) Previous Experience : YES/NO
 - b) Present assignments : YES/NO
 - c) organization chart of the company : YES/NO
 - d) Company financial status : YES/NO
 - e) Incase of company, proof of Registration of the company : YES/NO
 - f) Memorandum & Articles of Association of company/copy of Partnership deed : YES/NO
 - g) Profit & Loss account for the Last 3 years : YES/NO
 - h) Audited Balance sheet for the Last 3 years : YES/NO
 - i) Income Tax clearance certificate (latest) : YES/NO
 - j) Solvency Certificate from a Nationalised Bank : YES/NO
 - k) Power of Attorney of the person Signing the tender duly attested By a Notary Public : YES/NO
 - l) Manpower organization chart With deployment plan at site For posting of Engineers/super Visitors and workers/labourers For satisfactory completion of Work under this specification : YES/NO

SIGNATURE OF THE TENDERER

6. Whether the Tenderer is conversant with local labour laws & conditions : YES/NO
7. Whether the tenderer is aware of all safety rules and codes : YES/NO
8. Whether the Declaration sheet (as per appendix enclosed) : YES/NO
9. Time required for mobilization of of site organization and start of work : YES/NO
10. Whether list of tools and Plants available with the contractor and proposed to be deployed for this work enclosed : YES/NO
11. Whether all the Pages are read understood and signed. : YES/NO
12. Deviations, if any Pointed out :
13. Whether PF exemption No. is allotted by RPFC of your area if so, indicate number : YES/NO

SIGNATURE OF THE TENDERER