

***Bharat Heavy Electricals Limited***  
**High Pressure Boiler Plant**  
**Tiruchirappalli – 620 014. India**  
**Civil Engineering Department (Factory)**

**TENDER DOCUMENT (PRICE BID)**

**Name of work** : **Operation and Maintenance of  
Producer Gas Effluent Treatment  
Plant including laboratory analysis  
in BHEL, Tiruchirappalli-14.**

**Value of work** : **Rs.15.58 Lakh**

**Tender Notice No.** : **03/10-11**

**Tender Schedule No.** : **10/10-11**

**Period of Contract** : **12 (Twelve) Months**

**Issued to M/s / S/Shri** :

**BHARAT HEAVY ELECTRICALS LIMITED  
TIRUCHIRAPPALLI – 620 014**

**CIVIL ENGINEERING DEPARTMENT (FACTORY)**

**PREAMBLE**

Name of work:           Operation and Maintenance of Producer Gas Effluent Treatment Plant including laboratory analysis in BHEL, Tiruchirappalli-14.

01.    The scope of work also includes operation and maintenance activities of Effluent Treatment Plant located at BHEL, Tiruchy. The work is to be executed on all BHEL working days including public holidays and Sundays.

The scope of work also includes the following and the special conditions of the contract attached in the Price Bid of the tender document.

The existing Plant is capable of treating 500 cum of effluent per day. List of activities on daily basis and the process layout with characteristics of influent and effluent is enclosed in Annexure I & II respectively.

Operation and Maintenance is to be carried out in Three shifts a day for all the activities as listed in Annexure – I and maintaining pumps, DG set, Diesel pumping engine, power tiller, etc as listed in the Annexure – IV of Price Bid.

The contractor should engage Supervisors, Operators, Technicians, skilled and Unskilled workers and lab Chemist. The Man power requirement is given in Annexure-III for operation & treating the effluent generated from Producer Gas plant to the norms specified by BHEL and dispose the treated water as directed by the Engineer-in-charge. The labourers engaged should be paid not less than the prevailing minimum wages as per State Government norms.

Raw and treated water should be tested for pH, TSS, TDS, Phenolic compounds, COD, BOD @20 ° C for 5 days / 27° C for 3 days, Oil & Grease, etc as per the schedule given in the Annexure -V and raw effluent from P G Plant shall be tested once in a month and a record should be maintained and produced to BHEL for its verification. Analysis should be conducted in the lab located at ETP premises with all necessary equipment for conducting the above said tests.

The contractor should maintain all monitoring records w.r.t ETP operation and maintenance, Lab oratory analysis, etc as listed in the Annexure – VI of Price Bid..

The tar collected from tar oil separator of ETP is to be disposed to Producer Gas plant inside factory. Necessary empty barrels can be taken from them and filled tar barrels handed over back to P G Plant and get the acknowledgement for the qty. issued.

The Contractor should associate for collecting samples by statutory bodies like Central Pollution Control Board, Tamil Nadu Pollution Control Board and others if necessary.

The sludge collected from DAF scum drying bed shall be packed in polythene bags and kept inside the Hazardous wastage shed. Records should be maintained for the quantity generated and stored on monthly basis.

The spares required for all pumps and the equipments shall be given by the contractor well in advance so as to procure and keep ready to run the plant without any interruption, and the same will be issued to them on written requisition. Replacing of defective spares is in the scope of contractor. Records shall be maintained for the receipt and use of spares supplied by BHEL

During this period the contractor should take whole responsibility of Plant operation including treatment efficiency. Any deviation from the specific performance requirement of any equipment or quality of treated effluent as per norms, the contractor shall immediately take steps to rectify the deficiency without any extra cost to the Authority.

02. Time is the essence of the contract. Being a time bound work on maintenance nature, the contractor should make all efforts to complete the work in the stipulated time.
03. The tenderers are advised to visit BHEL site at Tiruchrappalli and get themselves acquainted with the site conditions before submitting the offer.
04. **Contractor should have separate Registration Code No. for EPF , ESI, Sales Tax and Service Tax.**

**The tenderer / Contractor should have PAN and submit the IT return filed and acknowledged by IT Office for the last three financial years.**

**Average annual turnover in the last 3 financial years shall be minimum of Rs. 4.68 Lakh**

**During last seven financial years should have successfully completed works either**

**Three similar works each not less than Rs. 6.24 Lakh (or)**

**Two similar works each not less than Rs. 7.79 Lakh (or)**

**One similar work not less than Rs. 12.48 Lakh**

**Solvency certificate shall be minimum for Rs. 6.24 Lakh**

**(The Certificate should have been issued within 6 months from the date of tender opening.)**

05. The norms for qualification with prescribed score is attached in the Qualification Bid Document. Evaluation will be done accordingly. Minimum score required for qualification is 60.
06. The works executed in the own name of the tenderer only will be considered for eligibility criteria.
07. Dissimilar / irrelevant works will not be considered for eligibility criteria.
08. The details on turnover, works experience, P.F, ESI registration etc., all as furnished by the tenderer shall have to be supported with documentary evidences. (Xerox copies-attested)
09. Tender Value is only approximate and liable for variation without entitling the tenderer to any compensation, provided the total value of contract does not vary by more than 20% (twenty percentage).
10. Quoted rate shall be firm throughout the contract period of **12 months** and extended contract period also and no cost escalation is allowed on any account.

11. The offered rate is for finished item of work as per Bill of Quantities and shall provide for the complete cost towards labour, materials, levies, taxes, transport, lay-out, repairs, rectifications, maintenance, supervision, establishment, services, overheads, profits & all other incidentals etc., complete. **However if the service tax is applicable for this contract, the same will be reimbursed on production of valid documentary evidence for having paid the service tax by the tenderer.**
12. For any item of work not covered in Bill of Quantities, the rate will be arrived at based on the conditions given in BHEL General Conditions of Contract.
13. **After award of work the contractor has to furnish the security deposit, as per Clause 13 of Tender Notice, attached in the Price Bid. Also it is to be noted that after award of work the contractor has to furnish security deposit before the commencement of work.**
14. As and when required, the contractor has to supply manpower like Unskilled, Skilled, Trade certificate holders etc. for which payment (daily/monthly) will be made to the contractor as per the prevailing rates of Government of Tamilnadu including employer's contribution of P.F & ESI and a profit margin of 10 % of labour wage.
15. The contractor has to carryout the work without affecting the working environment.
16. The decision of Engineer-in-charge shall be final and binding on the contractor regarding clarification of items in this tender schedule.
17. The contractor shall strictly adhere to various labour laws in force.
18. The contractor shall follow norms of BHEL security system for movement of men & materials within the complex.
19. Daily labour report for the manpower engaged on previous day area wise shall have to be submitted next day.
20. Since the responsibility for the quality, workmanship and accuracy of any work being carried out under this contract lies with the contractor, the contractor should ensure that no work is done without the presence of contractor's representative at the work spot.
21. The contractor has to submit the organization chart of their set up for the works and any change thereafter in the organization set up shall have the prior approval of BHEL.
22. Statement of completed works with detailed measurements along with material reconciliation statements shall be submitted by the contractor every week and the payment for the work done will be paid once in a month.
23. The tenderer shall carry out health performance test at his cost for all the workmen engaged in the work through a registered medical practitioner and produce certificate on demand.
24. It shall be the responsibility of the contractor to see that the workmen do not utilize the departmental canteen facilities. Contractor has to make his own arrangements to provide refreshment for the workmen.
25. The works contract to be entered into with the successful tenderer will be governed by the BHEL Revised General Conditions of Contract in force.
26. All materials brought by the Contractor for incorporation in the work shall be got inspected and approved by the Engineer-in-charge before they are incorporated in the work.

27. The contractor should extend fullest co-operation with the third party agencies engaged, if any by BHEL to adhere the Quality Control Procedures ensuring quality.
28. The contractor should extend full co-operation to the other contractors who may be doing other works in the same areas to enable them to execute their portions of work without any delay or difficulty.
29. **Water required for the work may be provided by this organization at only one point at the site of the work at free of cost.** In case of failure of water supply, the Contractor will have to make his own arrangements for water without any extra claims until supply is restored. BHEL does not accept any liability whatsoever for non-supply or delay in the supply of water under any circumstances. The contractor shall ensure that there is no wastage of water otherwise supply of water is liable to be stopped at contractor's risk and cost.
30. **Electrical energy required for the work may be given by this organization at any one point at the site of work at free of cost.** BHEL does not accept any liability whatsoever for non-supply, delay in supply or failure of supply of electrical energy. Contractor shall ensure that there is no wastage of electrical energy otherwise supply is liable to be stopped at contractor's risk and cost. The contractor shall make leak proof / fire proof shed and provide control panel board of required capacity and lay the required cables at their own cost for further distribution.
31. BHEL reserves its right to reject a tender due to unsatisfactory past performance in the execution of a contract at another project/unit awarded against a different enquiry.
32. BHEL reserves its right to accept/reject any or all the tenders.
33. Also BHEL reserves its right to finalize the contract through reverse auction for which only qualified tenderers will be provided with necessary documents containing reverse auction rules, terms and conditions for this purpose.
34. **No advance / mobilization advance will be given.**
35. LD/Penalty clause is applicable as per General Conditions of Contract. All the terms & conditions in the documents are binding on the tenderers.

**NOTE:-**

**Tender for the work should be submitted in a sealed cover consisting of three inner sealed covers such as i) EMD cover ii) Qualification bid cover & iii) Price bid cover, all superscribing the name of work, tender schedule number etc.**

**EMD cover shall contain requisite EMD in the form of DD.** Tenderers who had already remitted one time EMD should furnish the details of cash receipt No. \_\_\_\_\_ dt. \_\_\_\_\_, on the top of EMD cover. Tender without EMD / one time EMD reference will be summarily rejected and the qualification bid & price bid shall not be considered.

In case of tender documents downloaded from website, tender shall accompany the tender cost of Rs.750/- in the form of Demand Draft (separate) in addition to the EMD amount in the form of Demand Draft. Tender document (downloaded from website) without separate Demand Draft for tender cost and EMD will not be considered.

All Demand Draft shall be drawn in favour of **BHEL, Trichy** payable at Tiruchirappalli.

Qualification bid cover shall contain duly filled in qualification bid document signed by the tenderer in all the pages with documentary evidences for pre-qualification such as experience, value of work executed in the similar nature of work, etc. Any bid without proper documentary evidence for pre-qualification shall not be considered for further evaluation

The Price Bid cover shall contain price bid document duly filled in and signed by the tenderer in all the pages. **The tenderer has to quote most competitive rates for all the items given in the Bill of Quantities from page No. 33 to 42 of Price Bid.**

The completed qualification bid and price bid along with requisite EMD of **Rs.40,000/-** for each work in the form of Demand Draft in favour of BHEL shall reach the office of the undersigned on or before **16.08.10 at 14.55 hrs.** Tenderers who had already remitted one time EMD should furnish the details of cash receipt No. \_\_\_\_\_ dt. \_\_\_\_\_, on the top of EMD cover. EMD in any other form will not be accepted. The qualification bid will be opened on the **same day at 15.00 hrs.** In case of opening day falls on holiday or happened to be declared as a holiday, the receipt and opening of the tender shall automatically fall on the same timing of the next working day. Date and time of opening of the Price Bid shall be intimated only to the bidders those who have qualified after evaluation of the qualification bid. You / your authorized representative may participate in the tender opening.

## **REVERSE AUCTION**

**BHEL reserves the right to go for a Reverse Auction (RA)** instead of Opening the submitted sealed bid, which will be decided after technical evaluation. Information and general terms and conditions governing RA are given below.

### **GENERAL TERMS AND CONDITIONS OF RA**

Against this tender for the subject work/system with detailed scope of work as per tender specifications, BHEL may resort to "REVERSE AUCTION PROCEDURE" i.e., ON LINE BIDDING ON INTERNET.

1. For the proposed reverse auction, technically and commercially acceptable bidders only shall be eligible to participate.
2. BHEL will engage the services of a service provider who will provide all necessary training and assistance before commencement of on line bidding on internet.
3. BHEL will inform the vendor in writing in case of reverse auction, the details of Service Provider to enable them to contact & get trained.
4. Reverse Auction rules like event date, time, Start price, bid decrement, extensions etc. also will be communicated through service provider for compliance.
5. Vendors have to fax the Compliance form in the prescribed format (provided by Service provider) before start of Reverse auction. Without this, the vendor will not be eligible to Participate in the event.
6. BHEL will provide the calculation sheet (e.g., EXCEL sheet) which will help to arrive at "Total Cost to BHEL" like Taxes and Duties, Freight charges, Insurance and loading factors (for non-compliance to BHEL standard Commercial terms & conditions) for each of the vendor to enable them to fill-in the price and keep it ready for keying in during the Auction.

However if the service tax is applicable for this contract, the same will be reimbursed on production of valid document proof for having paid service tax by the tenderer.

7. Reverse auction will be conducted on scheduled date & time.
8. At the end of Reverse Auction event, the lowest bidder value will be known on the network.
9. The lowest bidder has to Fax the duly signed Filled-in prescribed format as provided on case-to-case basis to BHEL through Service provider within 24 hours of Auction without fail.
10. Any variation between the on-line bid value and the signed document will be considered as sabotaging the tender process and will invite disqualification of vendor to conduct business with BHEL as per prevailing procedure.
11. In case BHEL decides not to go for Reverse Auction procedure for this tender enquiry, the Price bids and price impacts, if any, already submitted and available with BHEL shall be opened as per BHEL's standard practice.
12. BHEL reserves the right to negotiate if need be, with the "L1" vendor of the Reverse Auction

**Force Majeure clause:** If at any time during the continuance of this contract the performance in whole or in part by either party of any obligations under this contract shall be prevented or delayed by reason, of any war, hostilities, acts of the public enemy, civil commotion, sabotage, fires, explosions, epidemics, quarantine, restrictions or acts of GOD (hereinafter referred to as events) then provided notice of happening of any such events is given by either party to other within twenty one days from the date of occurrence thereof neither party shall reason of such events be entitled to terminate this contract nor shall either party have any such non performance and delay is resumed as soon as practicable after such events has come to an end or ceased to exist. If the performance in whole or part of any obligation under this contract is prevented or delayed by reason or any such event claims for extension of time shall be granted for period considered reasonable by BHEL subject to prompt notification by the tenderer to BHEL of the particulars of the events and supply to the BHEL if required of any supporting evidence. Any waiver of time in respect of partial installment shall not be deemed to be a waiver of time in respect of remaining deliveries.

The correspondence exchanged against the tender from both tenderer and BHEL through email are considered as valid document legally though it is not signed. It is treated as valid confirmations made on behalf of the respective company and very much comes under the legal ambit of the business transaction and hence it is binding on both the parties to the business.

Any transaction pertaining to the tender from both the parties of business done round the clock irrespective of the office or business hours of the companies, are valid legally and binding on both the parties. This applies to the extent only in such cases where deadline time for transaction is not specifically declared by either or both the parties to the business.

In case Letter of Intent (LOI) is issued through email, the PC generated time and date of mail shall be construed as the official time and date of release of LOI. In as much as this date is within the last date of validity given by the bidder the LOI is said to have been issued within the validity period and shall be binding on both the parties to the business.

Tenderers participating in the tender should declare in their technical bid that whether they have been black-listed / kept on hold for a specified period / given Business holiday for a specified period by any Public sector undertaking or Government departments. The reasons for such action with details and the current status of such hold shall be clearly furnished to BHEL. If no such details are mentioned in the offer then it will be construed that the subject bidder is not under any such hold. But at a later date if it comes to the notice of BHEL about any such hold under enforcement on the subject bidder, BHEL will have every right to reject the offer of such vendors at any point of time and also under any stage of the finalisation of the subject tender irrespective of the status of the subject bidder in that tender. Such bidders will not be permitted to participate in the further tender proceedings and will be communicated suitably. They will not be also considered for any on going tenders even if participated till the hold is officially lifted and confirmed in writing.



BHARAT HEAVY ELECTRICALS LIMITED  
(A Government of India Undertaking )  
Unit : TIRUVERUMBUR, BOILER PROJECT, P.O.  
TIRUCHIRAPALLI - 620 014.

**CIVIL ENGINEERING DEPARTMENT**

**NOTICE INVITING TENDER**

01. Name of work : Operation and Maintenance of Producer Gas Effluent Treatment Plant including laboratory analysis in BHEL, Tiruchirappalli-14.
02. Estimated Cost : **Rs.15,58,000/-**
03. Earnest Money Deposit : **Rs.40,000/-**
04. Completion Time : **Twelve ( 12 ) Months**  
( From the date of commencement of the work which will be reckoned from the date of the site, handed over to the Contractor )
05. Cost of Tender Document : Rs. 750/- ( including Sales Tax )  
This amount will not be refunded under any circumstances
06. Last Date for Receipt of Tenders : 14.55 Hrs. on **26.08.10**
07. Date of Tender Opening : 15.00 Hrs. on **26.08.10**
08. Maintenance Period : **NIL**

Tender document contains **18** pages in Qualification Bid and **41** pages in Price Bid including Bill of Quantities, Drawing etc.

Issued to Messrs. / Thiru : .....

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**ISSUING OFFICER**

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## INSTRUCTIONS TO TENDERERS

1. The tender is open to all Contractors. The Contractors not borne on the approved list of contractors of this Organization must submit the following testimonials simultaneously with their tenders.
  - i. A Certificate to establish that the tenderer is an independent contractor working on his own
  - ii. At least two certificates from responsible Officers of Government of Firms of repute, regarding the tenderer's capacity to undertake and carryout the work tendered for or similar work satisfactorily

### NOTE :

- a) Copies of testimonials unless attested a Gazetted Officer will not be accepted
  - b) Non – Submission of the above testimonials simultaneously with the tenders may result in the tender being rejected
2. The tenders should be accompanied by a list of contracts already held by the contractor at the time of submitting the tender and giving the following particulars
    - a) Value of each contract
    - b) The balance value of work to be done on the same
  3. The tenderer is advised to obtain the tender documents in person or by a messenger duly authorized to do so. The BHARAT HEAVY ELECTRICALS LIMITED will not under any circumstances accept responsibility for the non – receipt of delay in the receipt of the tender documents by the tender.
  4. Rate for each item of the tender schedule should be quoted in FIGURES and in WORDS. In case of any difference in the rates quoted in figures and in words, the lower of the two rates will be taken as the tendered rate. Unit rate quoted shall be the basis for arriving the total value of the tender. The total amount for every item shall be arrived by multiplying the unit rate with the quantity indicated for that item. In case of any arithmetic deviation is noticed in the total amount, the same will be corrected and evaluated by taking unit rate as basis and multiplying with the quantity indicated.
  5. Rate quoted shall include all royalties, terminal taxes, Octroi duties, Central or Provincial Excise Tax, Sales Tax and any other taxes leviable under the State or Central Government rules. The Bharat Heavy Electricals Ltd., will not entertain any claim whatever in this respect. **However if the service tax is applicable for this contract, the same will be reimbursed on production of valid document proof for having paid service tax by the tenderer.**
  6. Tender Value is only approximate and liable for variation without entitling the tenderer to any compensation, till the total value of contract vary by more than 20% (Twenty Percentage)
  7. Quoted rate shall be firm throughout the contract period of **12** months sand no cost escalation is allowed on any account including extended period if any.
  8. The works contract to be entered in to with the contractor will be governed by the BHEL Revised General Conditions of contract in force.

9. Should a tender find discrepancies or omissions in the drawings or any of the tender documents or should be in doubt as to their meaning, he should at once address the authority inviting the tender for clarification. Every Endeavour is made to avoid any error which can materially affect the basis of the tender but the successful tenderer shall take upon himself to provide for the risk of any error which may be subsequently by discovered and shall make no subsequent claim on account thereof.
10. Tenders submitted by post should be sent "Registered Post with Acknowledgement due". These should be posted with due allowance for any delay in postal delivery. Tenders received after the due date and time of opening, tenders are liable to be rejected.
11. Where the tender called for covers only the building work and excludes internal services such as sanitary and water supply installations, electrification etc., the building contractor will have to leave pockets, holes, etc., as required for other works and will have to phase his work to ensure smooth progress of the work of the other agencies also as directed by the Engineer – in – charge.
12. Where the tender schedule contains special items of work such special floor finishes, foam concrete for insulation, special water proofing treatment to roofs etc., it will be entirely at the discretion of the Project Authorities to allot these items of work to other contractors specialized in these works. In such cases, the main building Contractor will have to tender all necessary co-operation to the agencies involved so as to ensure the smooth progress of all work.
13. The contractor's responsibility under this shall commence from the date of receipt of contract the order of acceptance of his tender. The scheduled period of completion for this work will be as mentioned in page No. 09, and the Contractor will have to plan his work accordingly.
14. Generally, the maintenance period for any work under BHEL Organisation will be Nil .

**15. Earnest Money Deposit:**

Earnest Money is to be paid by each tenderer to ensure that the tenderer does not refuse to execute the work after it is awarded to him. EMD be furnished only in the form of Pay Order or Demand Draft in favour of BHEL, Trichy , EMD in any other form will not be accepted. The rate of earnest money deposit shall be as under:

Works costing up to Rs. 2 lakhs	NIL
Works costing more than Rs.2 lakh and up to Rs. 5 lakhs	Rs. 10000/-
Works costing more than Rs.5 lakhs and up to Rs.10 lakhs	Rs. 20000/-
Works costing more than Rs.10 lakhs and up to Rs.20 lakhs	Rs. 40,000/-
Works costing more than Rs.20 lakhs and up to Rs.30 lakhs	Rs. 60,000/-
Works costing more than Rs.30 lakhs and up to Rs.50 lakhs	Rs.1,00,000/-
Works costing more than Rs.50 lakhs and up to Rs.100 lakhs	Rs.1,50,000/-
Works costing more than Rs.100 lakhs	Rs. 2,00,000/-

One time EMD will also be Rs.2.00 lakhs.

EMD by the Tenderer will be forfeited as per tender Documents if:

- a) After opening the tender, the tenderer revokes his tender within the validity period or increases his earlier quoted rates,
- b) The tenderer does not commence the work within the period as per LOI / Contract. In case the LOI / contract is silent in this regard then within 15 days after award of contract.

EMD given by all unsuccessful tenderers shall be refunded normally within fifteen days of acceptance of award of work by the successful tenderer.

EMD shall not carry any interest.

16. Should a tenderer or a contractor on the list of approved Contractors have a relative, or in the case of a firm or Company of contractors any of its share holders or shareholder's relative, employed in a gazetted capacity in the Engineering Department of the Bharat Heavy Electricals Limited, the authority inviting tenders shall be informed of this fact at the time of submission of the tender, failing which tender, may be disqualified or if such fact subsequently comes to light, the contract may be rescinded in accordance with the relevant provisions in the General Conditions of Contract.
17. If tenderer expires after the submission of his tender or after the acceptance of his tender the BHEL may, at their discretion, cancels such tender. If a partner of a firm expires after submission of tender or after the acceptance of the Tender, BHEL may cancel such Tender at their discretion unless the firm retain its character.
18. The Bharat Heavy Electricals Limited will not be bound by any power of attorney granted by the tenderer or by changes in the composition of firm made subsequent to the execution of the contract. They may however recognise such power of attorney and changes after obtaining proper legal advice the cost of which will be chargeable to the contract concerned.
19. If the tenderer deliberately gives wrong information in his tender or creates conditions favourable for the acceptance of his tender, the Bharat heavy Electricals Limited, reserves the right to reject such tender at any stage.
20. Words importing the singular number shall also be deemed to include the plural number and vice versa where the context so requires.
21. The expenses for competing and stamping the agreement shall be paid by the contractor.
22. The General and special conditions are complementary to each other and where they are conflict the Special Conditions shall prevail. In regard to matters not covered by the General and Special Conditions of Contract, those contained, those contained in the Tamil Nadu Building Practice Standard Specifications or other specifications approved by the Bharat Heavy Limited, Shall apply.
23. Tenderers shall not increase their quoted rates in case the Bharat Heavy Electricals Limited, negotiates for negotiation for reduction of rates. Such negotiation shall not amount to cancellation or withdrawal of the original offer and the rates originally quoted shall be binding on the tenderes for a period of three months from the date of opening of tenders.
24. Canvassing in any form in connection with tenders is strictly prohibited and the tenders submitted by the contractors who resort to canvassing will be liable to rejection
25. All contractors will have to produce Income tax Clearance Certificate from the Income Tax- Officer concerned along with their tenders. Those Contractors whose income is not taxable will be required to give an affidavit of their income on the prescribed form. If the successful tenderer fails to produce the Income – tax clearance certificate within the stated period the Earnest Money Deposit and Security Deposit of the tenderer may be forfeited and the contract terminated.

## TENDER NOTICE

**NAME OF WORK: Operation and Maintenance of Producer Gas Effluent Treatment Plant including laboratory analysis in BHEL, Tiruchirappalli-14.**

**ESTIMATED COST : Rs 15,58,000/-**

1. SEALED TENDERS for the above noted work are hereby invited from contractor experienced in works of similar kind and magnitude. Tenders will be received by **SR.MANAGER/CIVIL/PLANNING(FACTORY)** Bharat Heavy Electricals Limited, Tiruchirappalli – 620 014. Up to **14.55 Hrs.** on **16.08.10** and will be opened on the same day at **15.00 Hrs.** at the **Office of the SR.MANAGER /CIVIL/ PLANNING (FACTORY)** in the presence of such of those tenderers. Or their agents who may choose to attend.
2. TENDER FORMS and other particulars regarding the proposed work can be obtained on any working day from 8.00 A.M. to 4.30 P.M. upto **12.08.10** on payment of the prescribed sum of **Rs. 750 / -** per set ( including Sales Tax ) Amount nor refundable.
3. TENDERS must be submitted in sealed covers and should be addressed to the with full name and address of the tenderer and the name of work being noted on the cover
4. All entries in the tender documents should be in the one ink. Erasers and over writings are not permitted. All cancellations and insertions should be duly signed by the tenderer concerned.
5. TENDERERS should fill in all the required particulars in the blank spaces provided for this purpose in the tender documents and also sign each and every page of Tender Documents including the drawings attach there to before submitting their tender.
6. UNIT rate should be quoted in figures as well as in words with reference to each item and for all the items shown in the attached schedule. These rates shall be for the finished work in site. Amount of each item and the total page by page and also the grand total amount of the whole contract should be filled in by the tenderers. Unit rate quoted shall be the basis for arriving the total value of the tender. The total amount for every item shall be arrived by multiplying the unit rate with the quantity indicated for that item. In case of any arithmetic deviation is noticed in the total amount, the same will be corrected and evaluated by taking unit rate as basis and multiplying with the quantity indicated.
7. QUANTITIES shown in the attached schedule are only approximate and are liable to variation without entitling the Contractors to any compensation, provided the total value of the Contract does not vary by more than 20% (twenty percent )
8. In quoting their rates, the tenderers are advised to take account all factors including any fluctuations in the market rates etc. No claim will be entertained on this account after acceptance of the tender or during the currency of the contract.
9. Before tendering, the tenderers are advised to inspect the site of work and its environments and be well acquainted with the actual working and other Prevalent conditions position of materials and labour, General and Special Conditions of Contract. Instructions to tenders, drawings and Specifications and all other documents which form part of the Agreements to be entered into.
10. The rates quoted in the tender shall remain valid for a period **THREE MONTHS** from the date of opening of tenders.

CONTRACTOR

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11. In the event of tender being submitted by firm the tender must be signed separately and legibly by each partner or member of the firm or in their absence, by the person holding the power of attorney on behalf of the firm concerned in the latter case a copy of the power of attorney duly attested by a Gazetted Officer must accompany the tender.
12. Every tender must be accompanied with EMD for the amount as specified in Page No. 11 in any of the form mentioned in Para 15 of the "Instruction to Tenderers". This Earnest Money will be refunded to the unsuccessful tenderers within fifteen days of finalization of the award of work. In case of the successful tenderer, the Earnest Money will be retained as part of the Security Deposit for satisfactory completion of the work in accordance with Clause 16 of the General Conditions of Contract

NOTE : Cheques, Currency Notes and Money Orders will not be accepted in lieu of the deposit receipt referred to above

### 13. Security Deposit

13.1 Security Deposit should be collected from the successful tenderer . The rate of Security Deposit will be as below:

Upto Rs. 10 lakhs	: 10%
Above Rs. 10 lakhs upto Rs.50 lakhs	: 1 lakh + 7.5% of the amount exceeding Rs. 10 lakhs.
Above Rs. 50 lakhs	: Rs.4lakhs+ 5% of the amount exceeding Rs.50 lakhs.

The security Deposit should be collected before start of the work by the contractor.

13.2 Security Deposit may be furnished in any one of the following forms

- i) Cash (as permissible under the Income Tax Act)
- ii) Pay Order, Demand Draft in favour of BHEL.
- iii) Local cheques of scheduled banks, subject to realization.
- iv) Securities available from Post Offices such as National Savings Certificates, Kisan Vikas Patras etc.  
(Certificates should be held in the name of Contractor furnishing the security and duly pledged in favour of BHEL and discharged on the back).
- v) Bank Guarantee from Scheduled Banks / Public Financial Institutions as defined in the Companies Act. The Bank Guarantee format should have the approval of BHEL.
- vi) Fixed Deposit Receipt issued by Scheduled Banks / Public Financial Institutions as defined in the Companies Act . The FDR should be in the name of the contractor, A/C BHEL, duly discharged on the back.
- vii) Security deposit can also be recovered at the rate of 10% from the running bills. However in such cases at least 50% of the Security Deposit should be collected before start of the work and the balance 50% may be recovered from the running bills.
- viii) EMD of the successful tenderer shall be converted and adjusted against the security deposit.
- ix) The security deposit shall not carry any interest.

**NOTE:** Acceptance of Security Deposit against Sl. No. (iv) and (vi) above will be subject to hypothecation or endorsement on the documents in favour of BHEL. However, BHEL will not be liable or responsible in any manner for the collection of interest or renewal of the documents or in any other matter connected therewith.

14. Unless the contractor whose tender is accepted signs the Contract Agreements and makes the necessary security deposit specified in Para 13 above within Seven days of the date of the order directing him to do so the amount of Earnest Money Deposit already deposited by him will be forfeited and acceptance of his tender withdrawn.
15. If after opening of tenderer revokes his tender or increases his earlier quoted rates or after acceptance of his tender does not commence the work in accordance with the instruction of the Engineer-in-charge, the Earnest Money deposited by him will be forfeited and acceptance of his tender withdrawn. If only a part of the work included in the tender had been awarded to the tenderer, the amount of Earnest Money to be forfeited will be based on the value of the contract so awarded.
16. The Bharat Heavy Electricals Limited reserve the right to reject any or all the received or accept any tender or part thereof without assigning any reason thereof. In the case acceptance of part of tender, time for completion may also be reduced to the extent considered appropriate by the Accepting Authority.
17. Conditional and Unwitnessed tenders, tender containing absurd rates and amounts tenders which are incomplete or otherwise considered defective and tenders not in accordance with the tender conditions laid down by the Accepting Officer are liable to be rejected.
18. Tenders not submitted on the prescribed form are liable to be rejected
19. The work must be completed within a period as mentioned in page no.09.
20. The Chairman / General Manger / Deputy General Manager / Deputy Manager / Senior Engineer shall be Accepting Officer, herein after referred to as such for the purpose of this contract.
21. This tender notice shall be deemed to form an integral part of the contract to be entered into for this work.
22. The tenderers are advised to go through the condition stipulated in Tender document & code of conduct for 'Health & Safety of Contract Labourer' in details. Any violation thereof will invite punitive action being taken against them. While quoting the rate all the above factors are to be taken into account.

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## GENERAL AND SPECIAL CONDITIONS OF CONTRACT

### GENERAL CONDITIONS

1. No night work will be permitted without the written permission of the Engineer – in – charge.
2. Items of work other than those mentioned in the Bill of Quantities ( Tender Schedule ) attached hereto will be carried out at the rates to be fixed by this organization as per relevant clauses of the General Conditions of Contract.
3. **(a) Water required for the work may be provided by this organization at only one point at the site of the work at free of cost.** In case of failure of water supply, the Contractor will have to make his own arrangements for water without any extra claims until supply is restored. BHEL does not accept any liability whatsoever for non supply or delay in the supply of water under any circumstances. The contractor shall ensure that there is no wastage of water otherwise supply of water, is liable to be stopped at contractor at contractor risk and cost.  
  
**(b) Electrical energy required for he work may be provided by this organization at any one point at the site of work at free of cost.** BHEL does not accept any liability whatsoever for non-supply, delay in supply or failure of supply of electrical energy. Contractor shall ensure that there is no wastage of electrical energy otherwise supply is liable to be stopped at contractor's risk and cost.
4. permission for erection of temporary work sheds etc., at site will have to be obtained from BHEL in writing in advance.
5. The works contract to be entered into with the successful tenderer will be governed by the BHEL revised General Conditions of Contract in force.
6. The successful tenderer / Contractor shall observe all safety regulations and take necessary safety precaution as called for under the “BHEL General Conditions of Contract and Safety Precautions” enclosed herewith.
7. In all matters of dispute, the decision of the General Manager, Bharat Heavy Electricals Ltd., Tiruchirappalli – 620 014. shall be final and binding on the tender / contractor.
8. Some changes are likely in the quantities furnished as well as in the layout, design and specifications of the work. The rate quoted shall be deemed to be inclusive of all such contingencies.
9. All the terms and conditions in the tender documents are binding on the tenderers and BHEL reserves the right to accept or reject any or all the tenders and to award the work in parts or in full without assigning any reasons.
10. All the materials to be used in the work and nature of work shall conform to respective TNBP, IS and National Buildings Organisation Standard Specifications and shall be got approved by the Engineer – in – charge before actual incorporation in the work

## **SPECIAL CONDITIONS OF CONTRACT**

1. All materials brought by the Contractor for incorporation in the work shall be got inspected and approved by the Engineer-in-charge before they are incorporated in the work
2. The Engineer-in-charge or his duly authorized representative shall have all reasonable times access to Contractor's premises of work and shall have the power at all the reasonable times to inspect and test any portion of the work or examine the materials and workmanship of the structures during their manufacture and test. The contractor shall give due notice in Writing to the Inspecting Engineer of BHEL when the materials supplied to be incorporated in the work are ready for Inspection and test. No material shall be incorporated in the work until the inspecting Engineer certified in writing that such materials have been inspected and approved by him.
3. The Contractor shall closely scrutinizes all the drawing issued in connection with the work by this organization and bring to the notice of the Engineer-in-charge and any discrepancies, omissions in the drawings before undertaking the actual work pertaining thereto.
4. The contractor should submit in advance every fortnight a detailed Programme of work to be undertaken from time strictly in conformities with the "Time and Progress Chart" covering the entire constructed work and reschedule them wherever necessary during the progress of the work so as to achieve the target set. Periodical progress reports every fortnight should also be furnished by the Contractor regarding the collection of materials issued and to be issued from BHEL Stores and other relevant information as asked for by the Engineer-in-charge and other BHEL Officers-in-charge of the work.
5. The contractor should extend full co-operation to the other contractors who may be doing other works in the same areas to enable them to execute their portions of work without any delay or difficulty.

## **GENERAL SAFETY PRECAUTION TO BE FOLLOWED AT WORK SITE DURING EXECUTION**

The following safety measures should be strictly adhered to during execution of works at sites.

1. Providing the working platform with toe – board and handrail for continuous working at heights
2. Providing safety belt and life – line at all times for men working at heights
3. Providing dust or fume respirator in places where dust and fume concentration exist
4. Providing goggles and welding screens
5. Providing acid and alkali – proof rubber gloves for handling acid and alkali and chemical which are corrosive
6. Providing rubber gloves for working on electrical works
7. Ensuring proper lashing of the components while being transported in vehicles
8. The vehicles must have side supports or have body to support the materials conveyed
9. The materials should not be allowed to extend or overflow the sides of the vehicles
10. Materials should not be allowed to overhang from the rear edge of the body of the vehicle
11. Driver of the vehicle must possess valid license
12. Vehicle must not be overloaded beyond the prescribed limits.
13. Red flags and lights for parts projecting from the body of vehicle must be provided.
14. The speed restrictions within the factory premises must be strictly adhered to.
15. The gas cylinders must be always handled on trolleys or kept tied down when not in use. They should never be rolled as Roller for conveying.
16. Cylinders should not be used without Regulators.
17. All excavations must be barricaded and red lamps must be provided
18. All electrical connections must be properly earthed.
19. No work should be taken up of execution inside shop floor, without obtaining necessary work permit.
20. Providing helmet for high level work
21. The contractor should maintain a register regarding the driver license particulars
22. All personal protective equipment conform with standard specification as per the details given in the code of conduct.

All Contractors including their sub contractors, agents and labour engaged on the work are required to scrupulously adhere to the safety regulations, safety precautions and measures. Any violation thereof will invite punitive action being taken against them. Also contractors with frequent violations of safety regulations will not be entrusted with further work in this organization.

## **SAFETY PRECAUTIONS TO BE OBSERVED WHILE TRANSPORTING MATERIALS**

### **I. VEHICLE**

1. Vehicles carrying material should have proper registration documents and must be produced on demand by our Security Staff.
2. The light on right side, i.e., over the drivers cabin shall be in working condition.
3. Both the head lights as well as park lamps must be in working conditions.

### **II. MOVEMENT OF VEHICLE**

1. The vehicle should not travel at more than 20 km.ph in our premises.
2. The Driver of the vehicle must possess suitable light / heavy duty licence as the case may be and produce on demand by the Security Staff.
3. Vehicles carrying inflammable liquids in the tank containers should have grounding chain or the tank should be coated with insulating material also to take care Static Electricity.
4. In road junctions, speed breakers and railway crossing, the speed should be lowered and vehicle should proceed cautiously.
5. The driving should 'KEEP TO THE LEFT' at all places
6. The vehicle should not be parked in road which could obstruct the vehicular traffic
7. No person other than driver should be allowed to sit or stand on the prime mover or trailer
8. The vehicle should pass only through the approved routes. Short cuts should be forbidden.
9. There must be a safe distance behind another moving truck
10. The driver should avoid making quick starts, jerky stops or quick turns at excessive speed.

### **III SHIPPING**

1. Strong side supports should be provided on both sides of the trailer . the side supports should be fixed in such a way that it cannot be removed even temporarily.
2. Adequate packing must be given for easy slinging operation. The packing materials should be good enough to withstand the load.
3. The stacking of loads in the truck should be evenly placed. The load should not be heaped together or dumped over the chassis.
4. The loaded materials should be fastened tightly with 'WIRE ROPE' Manila rope or coir rope should not at all be used. There must be side packings such as gunny or rubber tyre between the sharp edge of the job and wire rope in order to avoid cut in the wire rope.
5. There must be minimum two fastenings and it should be more in case of lengthier loads.
6. The wire rope should be in sound conditions i.e, there should not be links, knots or bristles etc.,
7. The wire rope ends should be clamped with 'U' clamps
8. The load rope ends should not be beyond its standard capacity. The carrying capacity must be clearly marked on the trailer also.
9. The loose pieces should be bundled before loading on the truck.
10. There must be red flags or red lamps for the lengthy loads which extend beyond chassis
11. The load should not be over – hanging more than 3ft. from the end of the body
12. The materials should not be stacked too high to avoid hitting against live electric lines
13. While transporting the scraps, there must be wire netting cover to prevent failing of scrap.

### **IV GENERAL**

The vehicles should not be moved directly inside the production building in case the materials are to be unloaded there. But the vehicle should be parked outside the building and the driver should ascertain the passage as well as the unloading points with the help of shop officials. This will avoid the congestion of blocking of traffic in the gangway.

## **TERMS AND CONDITIONS REGARDING COMPLIANCE WITH VARIOUS LABOUR LAWS BY THE CONTRACTORS FOR BHEL**

1. The Contractor shall not employ in connection with the work any person who has not completed 18 years of age.
2. The Contractor shall in respect of labour employed by him either directly or through subcontractors, comply with or cause to be complied with the following statutory provisions and rules and in regard to all matters provided therein.
  - a) The Contract Labour (Regulation & Abolition) Act 1970 and the related Tamil Nadu Rules
  - b) The Minimum Wages Act 1948 and the related Tamil Nadu
  - c) The payment of Wages Act 1936 and the related Tamil Nadu Rules
  - d) The Factories Act 1948 and the related Tamil Nadu
  - e) The Employee's Provident Fund & Miscellaneous Provisions Act 1952.
  - f) The Employees State Insurance Act 1948
  - g) The Workmen Compensation Act. 1923
  - h) The Industrial Disputes Act 1947.

and any other law or modifications to the above or the to the Rules made thereunder from time to time.

### **REGISTRATION AND LICENSING**

3. Every Contractor shall register his name with the Welfare Section of BHEL before taking up the work awarded to him by giving the following information getting a Code Number:
  - a) The Name of the Contractor
  - b) Nature of Contract Work
  - c) Period of work
  - d) Number of maximum labour employed by him on any one day
  - e) License No. & Date (Applicable in case of contractor employing 20 or more workers)
  - f) Whether enrolled for PF, ESI, etc., and enrolment No.
4. The Contractor employing 20 or more workmen is required to obtain license from the authorities ( The Deputy Chief Inspector of Factories / Assistant Commissioner of Labour as the case may be ). The license shall be amended and / or renewed wherever, there is an increase in the workmen employed by him or in the event or contract being extended or renewed. The Contractor shall inform the license number to the BHEL Management before taking up the work.

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5. The Contractor (Licensed or unlicensed) shall promptly furnish every information and document required by BHEL authorities for the purpose of fulfilling their obligations as Principal Employer and / or Occupier of the Factory and shall render all necessary assistance for the same.

## **WAGES**

6. The Contractor shall pay wages to the workmen employed by him at the rate which shall not be less than the minimum wages applicable under Law from time to time
7. The Contractor shall fix wage periods in respect of which wages shall be payable. No wage period shall exceed one month.
8. The Contractor shall ensure payment of wages to the contract labour employed by him within three days from the end of wage period in case the wage period is one week or a fortnight and in all other cases before 10<sup>th</sup> day of the following month
9. All Payment of wages shall be made on working days at the work site and during the working time and on date notified in advance. In case the work is completed before the expiry of the wage period final payment shall be made within 48 hours of the last working day.
10. Where the employment of worker is terminated by or on behalf of the Contractor, the wages earned by him shall be paid before the expiry of the second working day from the day on which his employment is terminated.
11. Wages due to every worker shall be paid to him direct or to the person authorized him in this behalf. All wages shall be paid in current coin or in both.
12. The Contractor shall ensure the disbursement of wages in the presence of authorized representative of BHEL Management
13. The above payment shall be verified by the authorized office / representative of BHEL with the following certificate of the payment sheet "Certified that the amount shown in Column No..... has been paid to the workmen concerned in the presence on ..... at....."
14. A certificate of payment shall be furnished in duplicate by the Contractor to the Engineer in charge each month in Form 'A' enclosed.
15. A notice showing the wage period and the place and time of disbursement of wages shall be displayed at the work and a copy to be sent to the Welfare Department by the Contractor under acknowledgement.

16. Notices showing the rate of wages, weekly rest days, hours of work, wage period, date of payment of wages, names and addresses of the Inspector having jurisdiction, the date of unpaid wages shall be displayed in Tamil and English in conspicuous places at the establishment and work at work site by the Contractor. The Contractor shall inform the BHEL Management every month the details of contract labour engaged for contract in this following form:

- a) Serial Number
- b) Location
- c) Period of work
- d) No. of days worked
- e) No. of man worked
- f) Wages paid to workers

The above statement shall be furnished to BHEL Management at the end of every month.

### **REGISTERS AND RECORDS AND COLLECTION OF STATISTICS**

17. The following documents / formats under Contract Labour (Regulation & Abolition) Act 1970 and Tamil Nadu Rules Rules thereunder shall be maintained by each contractor.

- a) Register of persons employed by the Contractor
- b) Employment Card
- c) Service Certificate
- d) Muster Roll, Wage Register, Deduction Register, wage slip, Overtime Register, register of Fines, Register of Advances etc.,

18. The Contractor shall display the abstract of the Contract Labour (Regulation & Abolition) Act and the Rules thereunder both in English and Tamil.

19. Half yearly Return shall by the Contractor in duplicate to the Licensing Officer

20. The Contractor shall submit the returns required under the Contract Labour (Regulation \* Abolition) Act 1970 periodically to BHEL Management.

21. The Contractor shall without fail give upto date information in writing to the attendance of the workers employed by him.

22. The Contractor shall ensure that his workers keep and produce their Employment Card when coming to duty and take them back when leaving duty.

23. All the above registers and records shall be preserved in original for a period of three years. All the registers, records and notice maintained under the Act and rules shall be produced on demand by Inspector or any authority under the Act.

### **WORKING HOURS AND WORKING CONDITIONS**

24. No worker shall be required or allowed to work on Sunday unless he has or will have a holiday on anyone of the three days before or after the said say.

25. The Contractor shall inform BHEL Management in the prescribed form details of the contract workers scheduled to work on Sunday, the way of rest and also indicate the substituted holiday in lieu thereof. This shall be intimated two days in advance before his workmen and booked for work Sunday.

26. The contract labour working for more than nine hours in any day or for more than 48 hours in any week shall be paid wages at the rate of twice the ordinary rate of twice the ordinary rate of wages in accordance with the provisions of Sections 59 of the Factories Act 1948.
27. The Contractor shall provide all safety devices and personal protective equipment to his workmen at his own cost and shall ensure that his workmen wear / use such devices or equipment provided to them while doing the work and there should not be any relaxation on this.
28. The Contractor shall give four paid National Holidays to his workers, viz., 26<sup>th</sup> January, 1<sup>st</sup> May 15<sup>th</sup> August and 2<sup>nd</sup> October.
29. The Contractor shall ensure that his workmen vacate the premises after the shift is over.
30. The Contractor shall give leave with wages to his workmen who have worked for a period of 240 days of work performed by the worker during the previous calendar year. The worker whose services commences on a day other than the first of January shall be entitled to leave with wages at the above rate (One day for every 20 days of work) only if he had worked for a minimum of 2 / 3 of the total number of days in the remainder of the calendar year. This leave will be admissible only during the subsequent calendar year.
31. No woman worker shall be required or allowed to work in the Factory except between the hours of 6.00 A.M. and 7.00 P.M.
32. The Contractor shall comply with the provisions relating to Welfare and Health facilities as provided in the Contractor Labour (Regulation and Abolition) Act 1970 read with the Tamil Nadu Contract Labour Rules 1975.

#### **NOTICE OF ACCIDENTS**

33. Notwithstanding anything contrary to this, in the event of accident the contractor shall be required to fill injury report and submit the same to the Engineer in charge immediately and ensure the compliances of ESI / Workmen's compensation Act, Factories Act and Rules made there under. He shall also maintain a register of accident as per the Act.
34. The Contractor shall get the contract labour engaged by him insured Workmen's Compensation policy from general should be for the entire period of Contract. The Contract shall comply with the provisions of the Workmen's Compensation Act 1923. (This should be read in conjunction with the provisions of ESI Act )

#### **COVERAGE UNDER THE ESI ACT / PF AND MISCELLANEOUS PROVISIONS ACT**

35. The contractor shall ensure that all his workmen are covered under the Employee's State Insurance Act and producer to BHEL such Registration Number / Enrolment Number before executing the contract work.
36. The Contractor shall regularly pay the amount of contribution. i.e., employer's contributions as well as employees' contribution pursuant of the above scheme as time. The Contribution payable presently is 1.75% wages to be recovered from his workmen and 4.75% of wages to be contributed by the Contractor. Contributions recovered from employee and contribution made by the contractor may be rounded to the higher multiples of five paise.

37. The Contractor shall take note of any amendment that may be brought forth in the above contribution rate and act accordingly.
38. The contractor shall ensure that his workmen are covered under the EPF & Miscellaneous Provisions Act 1952 and accordingly produce to the BHEL Management the registration / enrolment number before awarding of contract work. As per the existing provisions every worker shall be entitled and required to become a member of the fund. The employee's contribution payable at present is 12% of wages which will be recovered by the contractor from the wages of his workmen and the contractor should pay equal contribution. The contractor is also liable to pay any administrative charges in this behalf that may be decided from time to time. It will be the responsibility of the contractor to ensure such contribution payable in respect of workmen employed through sub-contractors also.
39. The Contractor shall take note of any amendment in the rate of contribution payable under the scheme from time to time.
40. The Contractor shall with seven days of the close of every month submit to BHEL a statement showing the amount of contribution payable / paid for employees engaged by him or through him and shall also furnish to BHEL such information as Principal Employer is required to furnish under the provisions of the ESI Act and PF as well as the schemes made thereunder to the authorities concerned.
41. Whenever any sum of money is found to be recoverable from or payable by the contractor under the above Act, the sum shall be deducted from any sum that may be due or which at any time thereafter may become due to the Contractor under this contract or under any other contract or from his security deposit, the contractor shall immediately thereafter such further sums as may be required to replenish the shortage caused by such recoveries in amount of security deposit.
42. The Contractor shall abide by all the labour and other laws applicable to contract labour / worker under this contract and shall at all times keep BHEL indemnified against all losses, claims, prosecutions under any law.
43. In case of non-compliance of any of the provisions of the Acts and in case BHEL having complied with the same BHEL will be entitled to recover the same from the contractor / sub-contractor.
44. Non-exercise of any of the powers of rights available to BHEL hereunder to under any law, shall not in any way operate as waiver thereof.

Note: The Specimen forms for the following are available in BHEL.

- |    |           |   |  |
|----|-----------|---|--|
| 1) | Form 'A'  | - | Payment Certificate                        |
| 2) | Form IV   | - | Application for License                    |
| 3) | Form XIII | - | Register of Workmen employed by contractor |
| 4) | Form XIV  | - | Employment Card                            |
| 5) | Form XV   | - | Service Certificate                        |
| 6) | Form XVI  | - | Muster Roll                                |
| 7) | Form XVII | - | Register of wages                          |
| 8) | Form XIX  | - | Wage up                                    |

## SCHEDULE 'A'

### LIST OF WORKS AND PRICES

DETAILS & QUANTITIES of each item of work shown in the BILL OF QUANTITIES are only approximate. They are given as a guide for the purpose of tendering only and are liable to variation and alteration of the Competent Authority. The work under each item as executed shall be measured and priced at the corresponding rate quoted by the contractor in the BILL OF QUANTITIES

Sl.No.	Description of work / supplied	Total amount of work / supplies (in figures and words) Rs. Ps.	Period of contract
1.	Operation and Maintenance of Producer Gas Effluent Treatment Plant including laboratory analysis in BHEL, Tiruchy.	Rs. 15,58,000/- (Rupees fifteen lakh and fifty eight thousand only)	Twelve (12) months

### BILL OF QUANTITIES

Sl.No.	Appx.Qty.	Description of work	TNBP No.	Rate (Both in Unit fig & Words)	Amount Rs. Ps.
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AS PER SEPARATE SHEETS ATTACHED CONTAINING **10** PAGES

FROM SERIAL No.....**32**.....to.....**41**.....

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## SCHEDULE 'B'

1. The following materials will be issued FREE of cost to contractor at BHEL Stores / Stock yard.

SI.No.	DESCRIPTION	PLACE OF ISSUE
NIL		

2. It will be the responsibility of the Contractor to submit his demands for the above stores in writing at east seven days in advance of the actual requirement.
3. Issue of Stores is subject of the availability at the place of issue cited above, items of stores to be issued by BHEL which are not available at the time of indenting by the contractor may be supplied by BHEL after necessary procurement. The contractor shall not be entitled to any claim of compensation for delay in the supply of stores by BHEL under any circumstances.
4. The materials will be issued only during the working hours of the BHEL Stores Department ( 8.00 a.m. to 4.30 p.m. ). Contractor shall have to transport them to the site of work at his own cost as soon as they are issued to him.
5. The steel materials if issued will be in random lengths and sizes as stocked by the BHEL and the cost of all cutting, conversion, substitution and fabrication as well as wastage shall have to be borne by the Contractor.
6. The contractor shall from time to time render proper account of all materials issued to him by BHEL. If he fails to do so, no further issue of materials will be made to him and he will be held responsible for any delay in the execution of the work which may occur on this account.
7. Where A.C. Sheets and accessories, Doors, Windows, Sanitary fittings, Special glasses or other items are issued free of cost to the contractor, the contractor will have to make good at his own cost any loss or damage to any part or whole of the items issued to him as above. All wastage within the premises limits as fixed by BHEL will be charged for at the prescribed issued rates of BHEL. Excess wastage will be charged for at punitive rates which will be 100% higher than the issue rates.
8. All surplus materials in good condition which are not returned to the BHEL Stores as also quantities of materials consumed in excess of the max. permissible limit as fixed by BHEL shall be charged for at punitive rates.

The decision of the Senior Engineer / Dy. Manager / Manager as to the extent to which materials have been rendered surplus or consumed in excess of the actual requirements shall be final and conclusive and binding on the contractor.

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**SCHEDULE 'C'**

**ISSUE OF TOOLS AND PLANTS TO CONTRACTORS**

Sl.No.	Qty.	Particulars	Details of BHEL Crew Supplied	Hire Charges Per unit Per Day	Place of Issue	of	Remarks
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.....Nil.....

- a. Machineries shall not be operated over time without the written permission of the Sr. Engineer / Dy. Manager / Manager.
- b. All Coolies, Watermen etc., required in addition to BHEL crew mentioned in column 4 above shall be arranged by the contractor at his own expense.

**SCHEDULE 'D'**

NOTE : All Drawings are to be signed by the Contractor as well as the officer entering into contract.

SL.No.	DRAWING NUMBER	DESCRIPTION
--------	----------------	-------------

--NIL--

**SCHEDULE 'E'**

**LEAD STATEMENT**

Sl.No.	Name of Material	Name of Source	Lead Particulars both for Factory and Township
	--NIL--		

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C.A.....Date .....  
(To be used in conjunction with BHE Ltd., General Conditions of Contract )

### AUTHORITY TO TENDER

Tender Notice No.      **03/10-11**      Office of the  
SR.MANAGER/ CIVIL /PLANNING/ FACTORY,  
BHARAT HEAVY ELECTRICALS LIMITED  
TIRUCHY – 14.

Tender Schedule No.   **10/10-11**

~~Lumpsum / Percentage rate~~ / Item rate tender for works required in “**Operation and Maintenance of Producer Gas Effluent Treatment Plant including laboratory analysis in BHEL, Tiruchirappalli-14.**”

**Messrs.** ..... are / is hereby authorized to tender for the above work. The Tender is to be delivered at the Office of the **SR.MANAGER/CIVIL/PLANNING/FACTORY** Bharat Heavy Electricals Limited Unit, Thiruverumbur, Tiruchirappalli – 620 014 superscribing the name of works as mentioned above.

Any correspondence concerning this Tender should be addressed as indicated above quoting the Tender Notice, schedule No. and other relevant particulars.

BHARAT HEAVY ELECTRICALS LIMITED DO NOT BIND THEMSELVES TO ACCEPT THE LOWEST OR ANY TENDER

Issuing Officer with  
Designation

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Contract Agreement No.....

**TENDER**

To

SR.Manager/Civil/Planning/Factory  
Bharat Heavy Electricals Limited  
Unit : Tiruverumbur  
TIRUCHIRAPPALLI – 620 014.

I / We hereby offer to carry out the work of **“Operation and Maintenance of Producer Gas Effluent Treatment Plant including laboratory analysis in BHEL, Tiruchirappalli-14.”**

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

- 1. Specifications (General & Particular )
- 2. Drawings
- 3. Schedule ‘A’, ‘B’, ‘C’, ‘D’ & ‘E’ and Bill of Quantities attached hereto.
- 4. Schedule or rates
- 5. BHE Ltd., General & Special Conditions of Contract, Tender Notice and Instructions to Tenders attached hereto.

I / We forward herewith the sum of Rs.....as Earnest Money, which shall be refunded should this tender be rejected. I / We further agree to deposit such sum which along with the sum of Rs.....mentioned above shall make up 50% of the fully Security Deposit for this work as provided for under conditions of the BHARAT HEAVY ELECTRICALS LIMITED General Conditions of Contract.

I / We further agree to execute all the work referred to in the said documents upon the terms & condition contained or referred therein and as detailed in Schedule ‘A’ and Bill of Quantities annexure thereto an to carry out such deviations as may be ordered, vide conditions 6 of the BHEL Ltd., General Conditions of Contract upto a maximum of 20% of the tendered of Rs.....

I / WE further agree to refer all disputes, as required by condition 62 of the General conditions of Contract to the sole arbitration of an Officer, to be appointed by the General Manager, B.H.E.Ltd., in his sold discretion whose decision shall be final and binding.

**WITNESS**

Signature of the Contractor

Date:

- 1. ....
- 2. ....

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**GENERAL SUMMARY**

1.	(a) Net Cost of works or building etc., from Schedule 'A' and Bill of quantities annexed thereto	Rs.	
2.	Provisional sum	Rs.	
	Total	Rs.	.....
			.....

Rupees.....  
.....  
.....  
.....

Shri..... in the capacity of .....  
has been duly authorized by me / use to sign the tender for and on behalf of.....  
.....  
.....

( in block letters )

Date: \_\_\_\_\_ SIGNATURE OF CONTRACTOR

Witness: \_\_\_\_\_ Postal Address:

1..... Telephone No.  
Address

2.....  
Address

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..... alternations have been made in the Tender Document and as evidence that these alternations were made before the execution of contract agreement, they have been initialed by the Contractor and the

.....  
.....  
.....

... is hereby authorized to sign and initial on my behalf the documents forming part of this contract (Number of alternation in figures and words to be given me )

The above tender is accepted by me on behalf of the Bharat Heavy Electricals Limited, Unit Thriuverumbur, Tiruchirappalli – 620 014. for a sum of Rs.....

.....  
.....

..... at the item rates as indicated in the Bill of Quantities attached to Schedule 'A'.

Signature.....Date.....

Designation .....

**BHARAT HEAVY ELECTRICALS LIMITED  
TIRUCHIRAPPALLI – 14**

**BILL OF QUANTITIES**

NAME OF WORK: Operation and Maintenance of Producer Gas Effluent Treatment Plant including laboratory analysis in BHEL, Tiruchirappalli-14.

Sl. No.	Quantity	Description of work	Rate (both in figures and in words)	Unit	Total Rs. P.
1.	12 Months	Operation and Maintenance of existing Effluent Treatment Plant at BHEL, Trichy-14 located between Factory Oxidation Ponds near Pudu theru and R S K Nagar. The scope of work covers Operation of the Gas Plant Effluent Treatment Plant for <b>three shifts in a day</b> , as convenient to BHEL and on all the days including Holidays and Sundays in a year including Operation and maintenance of all equipments like pumps, motors, Compressor, Dissolved Air Floatation (DAF), Aerators, flash mixing units, DG set and Diesel Engines in case of power shut downs, Dosing of chemicals like alum, polymer, nutrients like DAP, Urea, fuels like diesel, lube oils, etc., regular cleaning of all chambers, tanks, drying beds and clearing away all debris in and around the plant, hazardous waste (dried DAF scum) packing and storing in identified area, disposing the treated water which should be non-toxic and as prescribed by standards to the area identified for Horticulture/ Plantations as directed by the Engineer-in-charge, trouble shooting of abnormal situation like process, mechanical and electrical failures, checking of leakages in the pipelines including periodical preventive maintenance, replacement of spares supplied by BHEL as and when required for safe running of equipments, flow measurements of influent and effluent of the plant if necessary, testing and analysis of influent and effluent samples of ETP, etc in the Lab located in the Plant premises, maintaining records for all operations, usage of consumables like, chemicals, fuel, power etc.		Per month	

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## **SPECIAL CONDITIONS OF CONTRACT**

- 01 The existing Plant is capable of treating 500 cum of effluent per day. List of activities on daily basis and the process layout with characteristics of influent and effluent is enclosed in Annexure I & II respectively.
- 02 The contractor should engage Supervisors, Operators, Technicians, skilled and Unskilled workers and lab Chemist. The Man power requirement is given in Annexure- III for operation & treating the effluent generated from Producer Gas plant to the norms specified by BHEL and dispose the treated water as directed by the Engineer-in-charge. The labourers engaged should be paid not less than the prevailing minimum wages as per State Government norms.
- 03 Operation and Maintenance is to be carried out in Three shifts a day for all the activities as listed in Annexure – I and maintaining pumps, DG set, Diesel pumping engine, power tiller, etc as listed in the Annexure – IV.
- 04 Deduction will be made on pro rata basis as per the approved and awarded rate in Sl.No.1 per month for any shift that is not operated for any reasons other than on BHEL account.
- 05 The work is to be executed on all BHEL working days including public holidays and Sundays.
- 06 If the system is not operated for more than a shift of 8 hours due to break-down on account of other than Power Supply, non availability of effluent, Spares, etc., recovery will be made on pro rata basis as per the approved and awarded rate as in Sl.No.1 per month from the date of break down to the date of putting back the system to perform effectively.
- 07 Required Power and water for the Operation of the system will be provided by BHEL free of charges.
- 08 Required Consumables like alum, Polymer, Urea, DAP, fuels like diesel, lube oils, etc. will be supplied by BHEL at stores.
- 9 Raw and treated water should be tested for pH, TSS, TDS, Phenolic compounds, COD, BOD @20 ° C for 5 days / 27° C for 3 days, Oil & Grease, etc as per the schedule given in the Annexure -V and raw effluent from P G Plant shall be tested once in a month and a record should be maintained and produced to BHEL for its verification. Analysis should be conducted in the lab located at ETP premises with all necessary equipment for conducting the above said tests.
- 10 The contract should maintain all monitoring records w.r.t ETP operation and maintenance, Lab oratory analysis, etc as listed in the Annexure – VI
- 11 The Contractor should associate for collecting samples by Statutory bodies like Central Pollution Control Board, Tamil Nadu Pollution Control Board and others if necessary.
- 12 The contractor shall ensure payment of Minimum wages, Bonus to the workmen employed by him at the rate at which shall not less than the minimum wage applicable under Law from time to time.

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- 13 PF &ESI Act should cover the workmen as applicable and payment will be made only on verification of the documents for the remittance of ESI and PF for the personnel engaged in the work.
- 14 The tar collected from tar oil separator of ETP is to be disposed to Producer Gas plant inside factory. Necessary empty barrels can be taken from them and filled tar barrels handed over back to P G Plant and get the acknowledgement for the qty.issued.
- 15 One Power tiller will be provided by BHEL free of hire charges for disposal of tar barrels to producer gas plant, receiving materials from BHEL stores, movement of hazardous waste (Dried DAF scum) to storage area, etc as and when required
- 16 The sludge collected from DAF scum drying bed shall be packed in polythene bags and kept inside the Hazardous wastage shed. Records should be maintained for the quantity generated and stored on monthly basis.
- 17 The contractor should submit the list and quantity of consumables and spares used every month for the verification by BHEL.
- 18 The spares required for all pumps and the equipments shall be given by the contractor well in advance so as to procure and keep ready to run the plant without any interruption, and the same will be issued to them on written requisition. Replacing of defective spares is in the scope of contractor. Records shall be maintained for the receipt and use of spares supplied by BHEL.
- 19 The workers should be provided with personal protective equipments such as Gloves, Goggles, safety shoes, waste cloths, soaps, etc by the Contractor.
- 20 The contractor should follow all procedures pertaining to safety and EMS in day to day running of the plant.
- 21 The contractor should keep a First Aid Box with list of Aids and should be refilled as and when required.
- 22 During this period the contractor should take whole responsibility of Plant operation including treatment efficiency. Any deviation from the specific performance requirement of any equipment or quality of treated effluent as per norms, the contractor shall immediately take steps to rectify the deficiency without any extra cost to the Authority.

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## Annexure - I

### DETAILED LIST OF ACTIVITIES (Ref: Sketch in Annexure – II)

S.No	ACTIVITY	
<b>1</b>	<b>Operation Of Effluent Pumps</b> (List of Pumps & equipments as listed in <b>Annexure-IV</b> )	
	A	Pump the PG plant effluent to Tar Oil separator by operating 10HP/3HP Pumps
	B	Pump sewage to Aerators by switching on 5 HP Pump
	C	Note down the initial and final readings of the flow meter in each shift.
<b>2</b>	<b>Operation Of Dissolved Air Flootation (DAF)</b>	
	A	Keep 95 kg of Alum (600 ppm, 10% solution) in 1000 litres of water. Mix it in Alum dosing tank with Compressed Air
	B	Keep 0.48 kg of Polymer (3ppm, 0.05 % solution) in 1000 litres of water. Mix the chemicals with Compressed Air in polymer tank
	C	Start Feed pump and Chemical dosing pump.
	D	Start High Pressure pump. Open the valves and adjust the pressure of Air Dissolved Tube to 4 kg/cm <sup>2</sup> . Keep Air flow into Air dissolved tube) ADT at 2 – 2.5 NM <sup>3</sup> /Hr.
	E	Adjust the pressure gauges (2 Nos.) of dissolved air inlet to the super cell at 4 kg/cm <sup>2</sup>
	F	Start the variable speed gear motor for scooping the floating scum from the cell.
	G	Collect the scum in scum drying beds. Pump the filtrate to the Aeration tanks.
	H	Collect, pack and store the dried scum in polythene bags at Hazardous waste storage shed
	I	Adjust the Alum dosing so as to get clear water from outlet of DAF system
	J	Frequently check all the pressure gauges and scum removal line
		<b><u>Shutting of DAF unit</u></b>
	K	Switch off High-Pressure pump, feed pump, Chemical dosing pump, compressor, and variable speed gear motor. Close the pressure gauges valves.
	L	Close the valves of Alum and Polymer tanks
	M	Close inlet valve of High pressure pump and cut off compressed air to ADT

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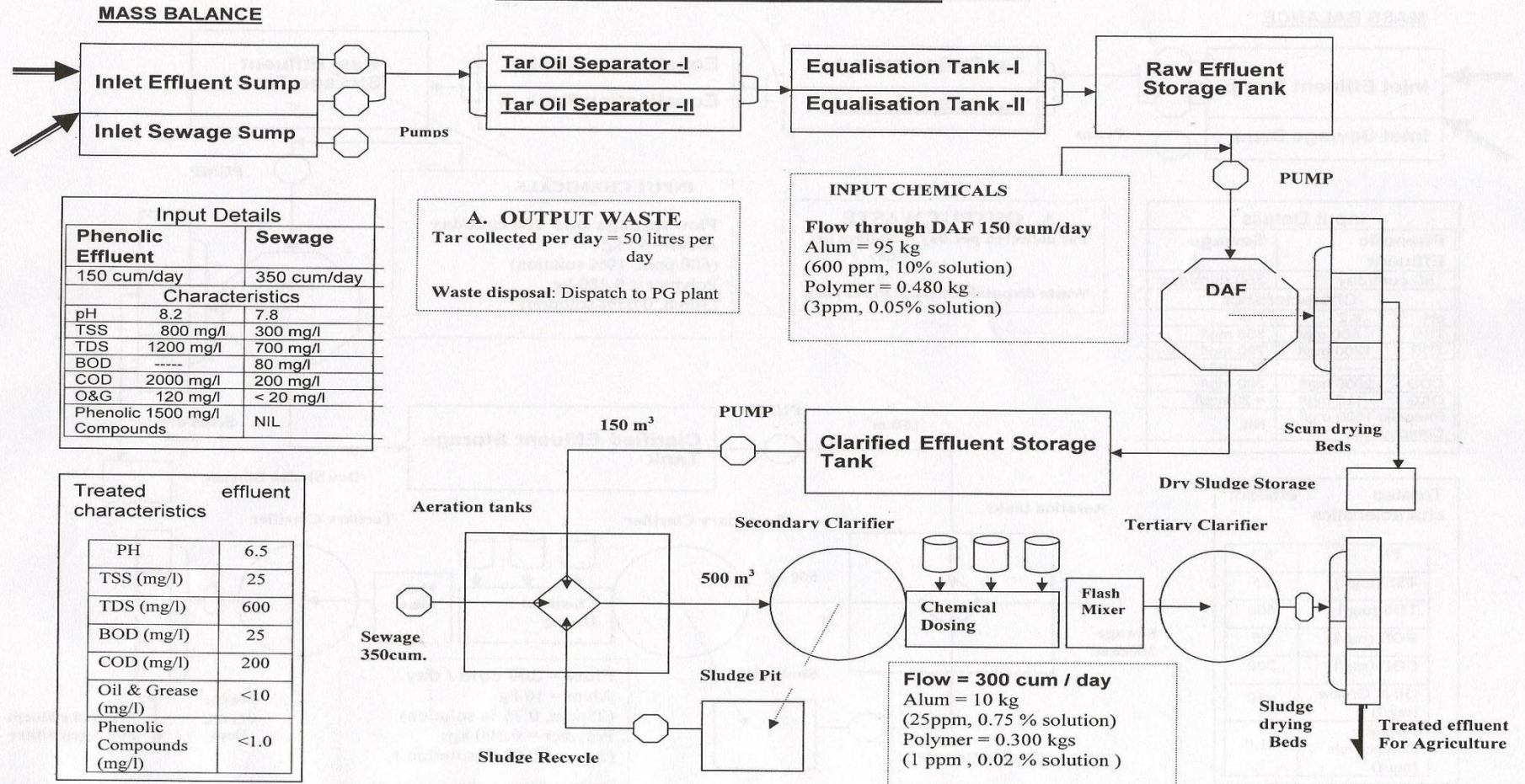
S.No	ACTIVITY	
<b>3</b>	<b>Operation of Aerators</b>	
	A	Ensure continuous running of all the four aerators and sewage pump of 5HP.
	B	Start the Clarified water storage tank pump and check the quantity of sewage inflow to the Aeration tanks. (1 part of effluent and 3 parts of sewage)
	C	Allow both sewage and clarified effluent to the Aeration tanks.
	D	Switch on the Sludge return Pump for a period of 8 (eight) hours in order to maintain required MLSS (1500 - 3000 mg/l) in the Aeration tanks. Check the Dissolved oxygen in all the four aeration tanks on daily basis.
	E	Keep 1 (one) kg of DAP and 1 (one) kg of urea each in all the tanks once in a day to maintain the ratio of nutrients to the organic load.
	F	Note down the pumping hours of the clarified water pump (3 HP)
<b>4</b>	<b>Chemical dosing after secondary clarifier.</b>	
	A	Add 10 kg of Alum (25 ppm, 0.75 % of solution for a flow of 500 cum / day.) and 0.30 kg of Polymer (1ppm, 0.003% of dilution for 300 cum / day of flow.) in the Alum and polymer tanks.
	B	Open the valves of Chemical dosing tanks. Run the flash mixer for mixing the Chemicals with clarified water.
	C	<b>Check the colour and pH of the water after tertiary clarifier frequently and adjust the chemical dosing accordingly.</b>
	D	<b>Pump the settled sludge from the tertiary clarifier to one of sludge drying beds.</b>
	E	<b>Collect the dried sludge from the sludge drying beds and dispose it in the area identified by the Engineer incharge.</b>
	F	<b>The supernatant from the tertiary clarifier is pumped to sand filters for filtering the effluent before disposal.</b>
	G	<b>Pump the filtrate from the final disposal sump to Horticulture purposes.</b>
	H	<b>Note down the initial and final reading of the flow meter in each shift provided at the final outlet point.</b>
<b>5</b>	<b>Maintenance of Pumps, Aerators, etc.,</b>	
	A	<u>Periodically tighten the foundation bolts of the pumps</u>
	B	<u>Check the glands ropes of pumps for leakage</u>
	C	Prime the pumps if necessary
	D	Check the foot valves of the pumps for clogging
	E	<u>Check the Oil level in the gear box of Aerators, Flash mixer, etc</u>
	F	Look for irregular sounds when the aerators are working. Take necessary action to arrest the vibrations

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Annexure - II

**GAS PLANT ETP FLOW CHART**



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**DETAILS OF PUMPS AND EQUIPMENTS**

SL No.	LOCATION	PUMP DETAILS					REMARKS
		MAKE	HP	KW	RPM	QTY	
<b>A. INLET PUMPS</b>							
01	Sewage Inlet Pump	Kishor	3.5	2.6	2900	1	Submersible grinder pump
02	Effluent inlet pump -1	Suguna	10	7.5	1440	1	
03	Effluent inlet Pump-2	Suguna	3	2.2	2880	1	3ph induction motor
<b>B. DAF SYSTEM</b>							
01	DAF inlet motor	ABB	5.0	3.7	2830	1	
02	DAF inlet motor	Suguna	5.0	3.7	2880	1	Stand by
03	Chemical Dosing Pump	ABB	0.5	0.37	1370	1	
04	High Pressure Pump	ABB	10	7.5	2850	1	3 Ø squirrel cage induction motor
05	DAF Scooper motor	Crompton	0.75	0.55	1395	1	
<b>C. AERATORS</b>							
01	Clarified water storage tank motor	Kirloskar	3.0	2.2	2830	1	
02	Surface Aerator – 1 ( Fixed type )	Kirloskar	5.0	3.7	1430	1	3ph induction motor
03	Surface Aerator –2 (Fixed type)	ABB	5.0	3.7	1425	1	3 Ø squirrel cage induction motor
04	Surface Aerator – 3 (Fixed type)	Kirloskar	5.0	3.7	1430	1	3ph induction motor
05	Surface Aerator – 4 (Fixed type)	ABB	5.0	3.7	1425	1	3 Ø squirrel cage induction motor
06	Sludge recycling pump	Kirloskar	3	2.2	2800	1	
<b>D. SECONDARY CHEMICAL DOSING</b>							
01	Stirrer Motor-1 (Alum)	Bharat Bijilee	3.0	2.2	1430	1	
02	Stirrer Motor-2 (Alum)	Bharat Bijilee	3.0	2.2	1430	1	
03	Stirrer Motor-3 (Polymer)	Bharat Bijilee	3.0	2.2	1430	1	
04	Flash mixer motor	Bharat Bijilee	3.0	2.2	1430	1	
<b>E. TERTIARY CLARIFIER</b>							
01	Tertiary Clarifier motor	Texmo	5	3.7	1440	1	3ph induction motor
02	Tertiary Clarifier motor	Suguna	3	2.2	2880	1	Stand by
<b>F. DISPOSAL SUMP</b>							
01	Treated water outlet Pump to collection well	Kirloskar	5.0	3.7	1430	1	3ph induction motor
02	Treated water outlet Pump to collection well	Suguna	5.0	3.7	2880	1	Stand by
03	Collection Well Pump	Kirloskar	10	7.5	1450	1	3ph induction motor
<b>G. OTHERS</b>							
01	Diesel Generator	Kirloskar	40KVA	-	1		
02	Motor for TOS Drive	VEM	3.5	2.6	-	1	

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## Annexure – V

### Sampling and analysis

S. No.	Parameter	Periodicity
<b>A.) Producer gas plant ETP</b>		
1	PH	Weekly once for both influent and effluent
2	Total suspended solids	
3	Total dissolved solids	
4	Oil & Grease	
5	Chemical oxygen demand	
6	Phenolic compounds	
7	BOD <sub>5</sub> @20°C or BOD <sub>3</sub> @27°C	Once in 10 days – both influent and effluent
8	Mixed liquor suspended solids	Once in 10 days – All four aeration tanks
9	Dissolved oxygen content	

## Annexure - VI

### List of records to be maintained

1. Consumption of chemicals like alum, Polymer, Nutrients (DAP & Urea), etc on daily basis.
2. Hours of Operation of all pumps, Aerators, DAF, etc.
3. Flow meter reading of Inlet (3HP/10HP) and outlet (5HP) pumps of
4. Hours of operation of DG set during power failure
5. Consumption of Diesel, kerosene, lubricants, etc.
6. Electrical units consumption in each shift
7. Breakdown and corrective/preventive actions
8. Process failures and corrective/preventive actions
9. Collection of tar in ETP and in carriage system from Producer gas plant to ETP
10. Lab monitoring records for all parameters
11. Records for receipt and use of spares, lab chemicals, etc.
12. Hazardous waste (DAF dried scum) generation and storage records
13. Pay acquittance and attendance register
14. EPF , ESI, Sales Tax, Service Tax and Pan No.

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