

Bharat Heavy Electricals Limited

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

TENDER DOCUMENT (PRICE BID)

Name of work : Design, Supply, construction, erection and commissioning of Sewage Treatment Plant using Membrane Bio-Reactor technology (6 lakh litre per day) for New Plant at BHEL, Tiruchy.

Tender Notice No. : 07 / 10-11

Tender Schedule No. : 16 / 10-11

Period of Contract : 6 Months

Issued to :

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

CIVIL ENGINEERING DEPARTMENT (FACTORY)

PREAMBLE

01. The scope of work includes **Design, civil construction, supply, erection and commissioning of Sewage Treatment Plant using Membrane Bio-Reactor technology (6 lakh litre per day) for New Plant at BHEL, Tiruchy.**
02. Time is the essence of the contract. Being a time bound project with capital expenditure, the contractor should make all efforts to complete the work in time
03. The scope includes Design, Construction of Civil Units, Supply and Erection of Mechanical units, Electricals and related activities for the **successful commissioning of the total system followed by one month trial run with 48 hrs continuous performance run of the equipment**, twelve months operation and maintenance of the system including consumables and testing of raw sewage & treated sewage for the effectiveness of the system.
04. The tenderer has to quote the rate inclusive of all civil work materials like cement, reinforcement steel, structural steel and steel tubes which will be issued by BHEL on chargeable basis as per the rates given in point No. 05 of this preamble.
05. Cement, reinforcement steel and structural steel will be issued by BHEL at BHEL stores and the cost of the same will be charged from the contractor's running bills for the quantity of net issue after deducting the returned quantity at the chargeable rates mentioned against each.

Cement	-	Rs 5334 / MT
Reinforcement Steel	-	Rs 39638 / MT
Structural Steel	-	Rs 38796 / MT
Tubular Steel	-	Rs 34028 / MT

06. All surplus raw steel remaining with the contractor can be returned to BHEL stores at his own cost after completion of work, in the form of full lengths, useful cut bits. The following yardstick will be adopted for the purpose of classification of useful cutbits.

(a) Mild steel and alloy Steel plates and sheets	1000 X 500mm and above.	Useful cut bit
(b) Structurals	One metre and above in length.	Useful cut bits
(c) Reinforcement steel rounds	One metre and above in length. But bent rods irrespective of their length are not taken as useful cut bits.	Useful cut bits
(d) Steel Tubes	One metre and above in straight length. But bent pipes irrespective of their length are not taken as useful cut bits.	Useful cut bits
(e) Cement	In useable condition with unstitched HDPE bag of cement (50 Kg) without setting.	With certificate from Site – in-charge as useable item.

07. The tenderers are advised to visit the New Plant at BHEL, Tiruchy and get themselves acquainted with the site conditions before submitting the offer

08. **The following eligibility criteria shall be complied to fulfill the Qualification Bid**

Separate Registration for EPF, ESI, PAN & Service Tax for the last three years (2007-10), IT returns acknowledged by IT Office, Profit & Loss Account and Balance Sheet certified by the auditor.

Average annual turnover of Design, Installation & Commissioning of STP in the last 3 years shall be atleast for a value of Rs. 34 Lakhs.

During last seven financial years should have successfully completed works either
Three similar works each not less than Rs. 45 Lakhs (OR)
Two similar works each not less than Rs. 57 Lakhs (OR)
One similar work not less than Rs. 90 Lakhs

Latest Solvency certificate (obtained within 6 months) from Nationalised / Scheduled Bank shall be atleast for a value of Rs. 45 Lakhs.

Minimum One Sewage Treatment Plant with membrane bio reactor technology of 600 cum per day should have been completed.

09. The works executed in the own name of the tenderer only will be considered for eligibility criteria. The nominated committee may also visit the works executed by the contractor to ascertain the nature of work before qualifying
10. BHEL reserves its right to reject the tender on account of unsatisfactory past performance by the present tenderer in another project / sister unit awarded under different enquiry.
11. Dissimilar / irrelevant works will not be considered for eligibility criteria.
12. Documentary evidences (Xerox copies - attested) for turnover, works experience, P.F, ESI, PAN & Service Tax registration etc., all as indicated & required in the tender document should be furnished without which it will not be taken into account.
13. The value of turnover and the value of similar works mentioned above includes cost of cement, reinforcement steel, structural steel and steel tubes.
14. The norms for qualification with prescribed score are attached in the Qualification Bid Document. Evaluation will be done accordingly. Minimum score required for qualification is 60.
15. Quoted rate shall be firm throughout the contract period of 6 months and no cost escalation is allowed on any account for this contract.
16. The lumpsum rate offered for each item is for finished items of work and shall provide for the complete cost also including fuel, tools, tackles, plant & machinery, temporary works, labour, materials, levies, taxes, transport, lay-out, repairs, rectifications, maintenance till handing over, supervision, labour colonies, establishment, services, roads, revenue expenses, overheads, profits & all other incidentals etc., complete. However if the service tax is applicable for this contract work and BHEL issue materials on chargeable basis, the same will be extra and will be reimbursed on production of valid document proof for having paid service tax by the contractor.
17. Even in case of changes in the layout, design and specifications of the work, the rates quoted shall be deemed to be inclusive of all such contingencies.
18. The tenderer should submit the mix design for RCC for different mix of concrete for different grade of cement at his cost through reputed institution.

19. The tenderer should use only weigh batch for all reinforced cement concrete works (controlled concrete).
20. Usually, working hours are limited to day time only. In emergency cases to carryout works during nights, it may be done so with the specific prior permission of BHEL. In such case, it is to be carried out in the presence of BHEL officials or their authorized persons.
21. The work shall be carried out as per the approved drawings, Civil Engineering Department Work & Safety procedure, AWS / BIS specifications, standard code of practice and as per the instructions of Engineer-in-charge. The brief description of items of work is given in the bill of quantities provided in the Price Bid. Tenderer has to quote rates both in figures and in words for all the items given in the Bill of Quantities provided in the Price Bid. **(page No. 27 & 28)**.
22. For any item of work not covered in Bill of Quantities and scope of work, the rate will be arrived at based on the conditions given in BHEL General Conditions of Contract in force.
23. The tenderer has to furnish the security deposit, as per Clause 13 of Tender Notice, attached in the Price Bid if the work is awarded. Also it is to be noted that after award of work the contractor has to furnish 50 % of security deposit before the commencement of work.
24. The tenderer should bring the construction earth moving machineries like Poclain, JCB etc., as and when required for the work without any delay. Also required number of the following tools & Plants / instruments shall be made available always at site for the works.
 - a. Full load mixture machine along with weigh batcher
 - b. Petrol / Kerosene driven vibrator/ mechanical vibrator
 - c. Cube moulds
 - d. Inter carting vehicle (tractor, hand trolley etc)
 - e. Mobile / Hydraulic crane
 - f. Welding machine etc.
 - g. Steel shuttering
 - h. Pipe scaffolding
25. The tenderer has to arrange sufficient number of lorries to collect & transport the surplus earth, construction debris generated, etc. at site. Otherwise BHEL would clear the debris at the contractor's risk and cost. The surplus earth is to be disposed of, at the locations as directed by the Engineer-in-charge.
26. Since the responsibility for the quality, workmanship and accuracy of any work being carried out under this contract lies with the tenderer, the tenderer should ensure that no work is done without the presence of tenderer's representative at the work spot. The contractor should arrange for surveying construction site at his own cost.
27. Statement of completed works with measurements shall be submitted by the contractor for making stage payments.
28. The decision of Engineer-in-charge shall be final and binding on the contractor regarding clarification of items in this tender schedule.
29. The works contract to be entered into with the successful tenderer will be governed by the BHEL Revised General Conditions of Contract in force.
30. The tenderer shall strictly adhere to various labour laws in force.
31. The tenderer has to submit the list of machineries to be deployed exclusively for this work, 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.

32. The tenderer should submit the programme for the completion of work and the list of machineries and site personnel to be deployed for the work along with tender.
33. The tenderer should establish his own site office, for which vacant land will be allotted on specific request for which the rent will not be collected. No land will be provided towards labour colony.
34. The tenderer should establish his own site office, fabrication yard, handling facility, storage facility to stock about 100 MT of cement etc., for which vacant land will be allotted on specific request for which the rent will not be collected.
35. The tenderer is required to carry out construction activities as directed by the department officials. It is required to engage certain minimum strength of staff for effective supervision of works as indicated below:

Site in-charge / Construction Manager	-	1 No.
Planning Engineer and coordinator	-	1 No.
Civil Engineer (Graduate in Civil Engineering)	-	1 No.
Mechanical / Electrical Engineer	-	1 No.
Safety Engineer	-	1 No.

36. To safeguard the persons working at underground etc., sufficient number of Industrial Safety PPE shall be provided at tenderer's cost in appropriate level and locations. The working hand including Supervisors, Engineers should wear the personal protective items and safety measures such as helmets, safety belts, shoes, etc., before entering into working place.
37. The tenderer has to deploy adequate labour of required categories such as Unskilled, Skilled, Mason, Carpenter, Plumber, Welder, Fitter, Electrician, Technically experienced, etc. so as to execute the works simultaneously in all areas of work. The Technical persons with experience shall have to produce valid certificate for verification.
38. The tenderer shall follow norms of BHEL security system for movement of men & materials within the complex.
39. Exclusive Stores personnel should be engaged who would co ordinate with department official for clearance and collection of BHEL supplied materials required for works.
40. Separate non-technical persons should be engaged for arranging daily gate passes for labours and vehicles entry in all the gates of Factory Complex.
41. 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.
42. It shall be the responsibility of the tenderer to see that the workmen do not utilize the departmental canteen facilities. Tenderer has to make his own arrangements to provide refreshment for the workmen.
43. All the works shall be executed as per the standard specifications as provided in TNBP / BIS.
44. All the materials to be used in the work and the nature of work shall conform to the respective TNBP & BIS and National Building Organisation, Standard Specifications forming part of "ALL INDIA STANDARD SCHEDULE OF RATES" specifications and shall be got approved by the Engineer-in-charge before actual incorporation in the work.
45. The tenderer should maintain proper accounts for cement, reinforcement steel, structural steel sections, steel tubes and other materials if any supplied by this department and should be available at the site of work for verification and check by the Officials of this Organisation at any time.

46. 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. All the structural works including fabrication, erection etc., are subjected to inspection and clearance by BHEL.
47. The tenderer should use only the materials of brand and quality as approved by BHEL.
48. All materials and consumables brought by the tenderer should have manufacturer's certificate.
49. All tools and plants including jack hammer with silencer & bits, rock drilling machine, etc., required for all the works covered under this contract will have to be brought by the tenderer.
50. All safety measures are to be followed during execution of work, particularly during blasting and only licensed blaster should be engaged for this purpose. Sufficient care shall be taken by the contractor during excavation to avoid damages to the buried pipe lines, cables and other infrastructure like railway lines if any etc. Controlled blasting including muffling can be carried out with prior permission from safety department. If any damage is made during the blasting operation, it should be rectified by the contractor at his own cost.
51. Tenderer's materials and tools & plants shall have to be brought inside the plant area with proper invoice / voucher and make necessary entry in the security gate. They should maintain proper record for tools and plants, materials, etc., brought inside the factory complex.
52. The tenderer should extend full co-operation with the third party agencies engaged, if any by BHEL to adhere the Quality Control Procedures ensuring quality.
53. The tenderer 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.
54. With regard to specifications not covered by the General and Special Conditions of Contract, those contained in the Tamil Nadu Building Practice Standard Specifications or other specifications approved by Bharat Heavy Electricals Limited, shall apply.
55. **Water required for the work and labour colony will 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 tenderer 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 tenderer shall ensure that there is no wastage of water otherwise supply of water is liable to be stopped at contractor's risk and cost.
56. **Electrical energy required for the work will 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. Tenderer shall ensure that there is no wastage of electrical energy otherwise supply is liable to be stopped at contractor's risk and cost. The tenderer 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.
57. The tenderer should be in a position to make his own arrangement for compressed air without any extra claim for the uninterrupted operation of jack hammer with silencer
58. Purchase preference policy if applicable will be extended to CPSE bidders subject to other terms & conditions as provided in the office memorandum issued by DPE. The tenderer has to furnish copy of Government circular for claiming purchase preference.
59. Tenderers are requested to furnish the duly filled in E format attached as separate sheet along with a cancelled cheque leaf to accept Electronic fund transfer / R T G S transfer for any payment from BHEL, Trichy.

60. Bank Guarantee format can be obtained after award of work in case of successful tenderer.
61. No advance / mobilization advance will be given.
62. LD / Penalty clause is applicable as per General Conditions of Contract in force.
63. BHEL reserves its right to accept / reject any or all the tenders without assigning any reasons.
64. 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.
65. The quoted amount as provided in this tender will be in full and final for functions to be performed by the tenderer and no claim whatsoever shall be made against BHEL in respect of any part relating to the plans, drawings and other documents submitted by the tenderer. The drawings, design, plan, related details prepared and acquired by the tenderer for the work entrusted to him under this agreement will become the property of BHEL. The drawings, design, plan, related details cannot be issued to any other person, firm or authority or used by the tenderer for any other project without prior permission of BHEL.
66. All the design and drawings pertaining to this contract shall get approved from BHEL before commencing the work. The tenderer shall supply 3 sets of all the design and drawings approved by BHEL pertaining to this contract to the department at free of cost.
67. The tenderer shall not make any deviations, alterations or omissions from the approved drawings, without prior consent of the Department.
68. All the approved drawings shall be the property of BHEL. The same shall be submitted to the department immediately after getting them approved.
69. BHEL may review the work carried out by the tenderer at planning, detailed engineering or at any pre-constructional stage to get satisfied with the standards and procedures adopted by the tenderer to make available the concerned documents to BHEL on demand.
70. It is the responsibility of the tenderer to plan and design the STP based on standard engineering practice. The tenderer shall stand guarantee for the performance of the system designed by them for a minimum of 50 years. A guarantee bond on standard approved proforma shall be provided by the tenderer.
71. The tenderer shall provide detailed computations and back up of structural design sheets to BHEL
72. The tenderer shall provide all drawings and designs on Auto CAD, STADD-PRO or any relevant computer programmes. Copy of final design / drawings shall be made available to BHEL in soft copy also.



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

CIVIL ENGINEERING DEPARTMENT (FACTORY)

NOTICE INVITING TENDER

01. Name of Work : **Design, Supply, construction, erection and commissioning of Sewage Treatment Plant using Membrane Bio-Reactor Technology (6 lakh litre per day) for New Plant at BHEL, Tiruchy.**
02. Earnest Money Deposit : **Rs.2,00,000/-**
03. Completion Time : **SIX (6) Months**
(From the date of commencement of the work which will be reckoned from the date of handing over of the site to the Contractor)
04. Cost of Tender Document : **Rs.750/-** (including Sales Tax)
This amount will not be refunded under any circumstances
05. Last Date for Receipt of Tenders : **14.55 Hrs. on 25.03.2011**
06. Date of QB of Tender Opening : **15.00 Hrs. on 25.03.2011**
07. Maintenance Period : **6 (Six Months from the date of actual completion of the entire work and handing over to Bharat Heavy Electricals Limited)**

Tender document contains **209** pages in Qualification Bid and **35** pages in Price Bid including Bill of Quantities, Drawing etc.

Issued to Messrs. / Thiru :

.....

.....

.....

ISSUING OFFICER

CONTRACTOR

8

ACCEPTING OFFICER

INSTRUCTIONS TO TENDERERS

1. The tender is open to all Contractors. The Contractors not borne on the approved list of contractors of this Organisation 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 by 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, cess on Building and other construction workers Act 1996 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 work including BHEL issue materials on chargeable basis, the same will be extra and will be reimbursed on submission of the documentary evidence for having paid service tax by the tenderer.**
6. 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 endeavor 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.

7. 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.
8. 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.
9. 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.
10. The contractor's responsibility under this contract shall commence from the date of receipt of the LOI by the tenderer. The scheduled period of completion for this work will be as mentioned in page No. 08, and the Contractor will have to plan his work accordingly.
11. Generally, the maintenance period for any work under BHEL Organisation will be SIX (6) MONTHS .

12. 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. Shall also be furnished in the form of Pay Order or Demand Draft in favour of BHEL, 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. 10,000/-
Works costing more than Rs.5 lakhs and up to Rs.10 lakhs	Rs. 20,000/-
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 Lakh.

EMD by the Tenderer will be forfeited if,

- a) After opening the tender, the tenderer revokes his tender within the validity period or increases his earlier quoted rates.
- c) 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.
- c) EMD given by all unsuccessful tenderers shall be refunded normally within fifteen days of acceptance of award of work by the successful tenderer.
- d) EMD shall not carry any interest.

13. 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.
14. 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.
15. 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 dispatch such power of attorney and changes after obtaining proper legal advice the cost of which will be chargeable to the contract concerned.
16. 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. 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.
17. Words importing the singular number shall also be deemed to include the plural number and vice versa where the context so requires.
18. The expenses for completing and stamping the agreement shall be paid by the contractor.
19. 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 in the Tamil Nadu Building Practice Standard Specifications or other specifications approved by the Bharat Heavy Limited, Shall apply.
20. Tenderers shall not increase their quoted rate in case the Bharat Heavy Electricals Limited, negotiates for negotiation for reduction of rate. Such negotiation shall not amount to cancellation or withdrawal of the original offer and the rate originally quoted shall be binding on the tenderes for a period of three months from the date of opening of tenders.
21. 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
22. All contractors will have to produce copy of Income tax Return for the last three years 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.

TENDER NOTICE

NAME OF WORK : Design, supply, construction, erection and commissioning of Sewage Treatment Plant using Membrane Bio-Reactor Technology (6 lakh litre per day) for New Plant at BHEL, Tiruchy.

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 **25.03.2011** 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. up to **22.03.2011** 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 **SR.MANAGER/CIVIL/PLANNING (FACTORY)** 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 one ink. Erasers and overwritings 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 attached 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 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. 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.
8. 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.
9. In case of any discrepancy between general conditions of contract & preamble , only preamble prevails over the other . Likewise the specification in the BOQ over the rest of the document.
10. Quoted rate shall be firm throughout the contract period of **6 months** and no cost escalation is allowed on any account.

CONTRACTOR

12

ACCEPTING OFFICER

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. 02 in any of the form mentioned in Para 12 of the "Instruction to Tenderers". This Earnest Money will be refunded to the unsuccessful tenderers within fifteen days of finalisation 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:

Up to Rs. 10 lakhs	10%
Above Rs. 10 lakhs up to Rs.50 lakhs	Rs.1 lakh + 7.5% of the amount exceeding Rs. 10 lakhs.
Above Rs. 50 lakhs	Rs.4 lakhs + 5% of the amount exceeding Rs. 50 lakhs.

The security Deposit should be collected before start of the work from 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 subject to a maximum of 50% of the total security deposit value. The balance 50% has to be remitted either by cash or in the other form of security. 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.

13. 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.
14. After tender opening if tenderer revokes his tender or increases his earlier quoted percentage rate 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.
15. The Bharat Heavy Electricals Limited reserved 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. 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.
16. Conditional and Un witnessed 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.
17. Tenders not submitted on the prescribed form are liable to be rejected
18. The work must be completed within a period as mentioned in page No.08.
19. 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.
20. This tender notice shall be deemed to form an integral part of the contract to be entered into for this work.
21. 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.

ISSUING OFFICER

CONTRACTOR

14

ACCEPTING OFFICER

SCOPE OF WORK FOR SEWAGE TREATMENT PLANT OF CAPACITY 600 CUM / DAY

1.0 DESIGN BASIS :

- 1.1 The system shall be designed for treating 600 cum of raw effluent using MBR technology. However suitable provisions shall be made to treat 200 cum of raw effluent at initial stage and subsequently to the full capacity of 600 cum/day.
- 1.2 At present the raw sewage is stored in a tank through sewage inlet pipe at about 3.00 from the ground level before pumping to oxidation pond. The raw sewage shall be taken out from the existing storage tank to screen chamber by laying suitable pipe line.

1.3 Parameter

SI No	Characteristics	Indicative parameters for Raw sewage	Desired Quality of Treated sewage
1	pH	6.0 - 8.5	6.5-8.5
2	TSS	150 - 400 mg/l	< 5 mg/l
3	BOD	150 - 300 mg/l	< 5 mg/l
4	COD	400 - 600 mg/l	< 20 mg/l
5	Oil & Grease	20 - 100 mg/l	< 5 mg/l

The parameters given for the raw sewage is indicative only. The analysis for the actual parameters shall be carried out by the tenderer.

2.0 SCOPE OF WORK

1. The scope of work includes all civil construction works, including trenches, steps, platforms, hand rails, inserts, etc.
 2. Supply, erection, testing of equipments ,cabling, piping, & successful commissioning of the plant meeting the output requirement.
 3. Yard lighting, pump house lighting & lightening protection, earthing, cable trays, etc.
 4. All chemicals, consumables, lubricants etc during the commissioning & trial running of the plant for 1 month after commissioning
 5. Testing of raw sewage and treated sewage every week as indicated under performance test.
 6. Technical assistance for filling / filing the application with TNPCB & to attend technical discussions with TNPCB officials.
 7. The battery limit is from collection sump to Treated sewage storage tank
- 2.1 Design, supply, erection and commissioning including performance test (48 hours continuous operation) and trial operation (one month), including O&M for the first year.

Design and Engineering:

- i. Carry out Process design based on present hydraulic and organic loading specified above
- ii. Preparation of Hydraulic Flow Diagram, Plan Layout & General arrangement drawing.
- iii. Preparation of Mechanical and Electrical design calculations for arriving the suitable capacity of pumps & motors, mechanism, aeration system, etc. Submission of supplier's technical details including characteristic features of equipments.
- iv. Structural Design and preparation of Civil Construction Drawing shall be approved by BHEL.
- v. Civil drawings should be provided with details like handrail, ladders, platforms, cable trays, foundations, inserts etc complete.

Note: Above said drawings should be submitted in 3 sets after incorporating necessary changes if required as suggested by BHEL.

Supply, erection and commissioning

- i. Includes supply, storage at site, erection, testing, commissioning of all mechanical and electrical equipment as indicated under "Specification for Mechanical Units"
- ii. Supply of necessary piping including laying, jointing with necessary specials and flow control valves (gate valves & Non-return valves) within the battery limit.
- iii. Supply and erection of lifting devices for the pumps wherever necessary with chain pulley arrangement.
- iv. Earthwork excavation for laying pipes and cables within the battery limit.
- v. Supply and erection of HDPE dosing tank and connections
- vi. All type of electrical wiring and laying of electrical cables within the battery limit. Power source will be provided at control room from which the contractor has to tap for his requirement.
- vii. The MCC should include Amps Incomer, RYB Indicator, Ammeter and Voltmeter, Electronic KWH Meter, Single Phase Preventer, Power Feeder of each 9 Amps Power contactor, Overload relay, MCB, Trip Indicator, Push Buttons for all Motors, an additional set of Push Button near the Motors and aerators. Provision for one spare feeder.
- viii. The Submersible Pumps should be provided with auto float switch. And the Sludge Pump should run on Electronic Timer to regulate the frequency of Sludge re-circulation to Aeration Tank.
- ix. MIMIC LED Indication with Hydraulic Flow Diagram on the Control Panel Showing Motor ON/OFF indication.
- x. Providing labour, supervision, material, scaffolding, erection equipment, tools and plants, temporary works, transportation and all incidental items not shown or specified but reasonably implied or necessary for proper successful completion of work in all respects.
- xi. Providing earthing for all the equipments.

Performance test (48 hours) and Trial operation (one month)

- i. After successful commissioning of the plant in all respects, all the equipments will be tested for performance guarantee for a duration of 48 hours, within the one-month trial operation.
- ii. During this period, all the equipment should run continuously without stoppage and performance parameters as required for each equipment need to be proved.
- iii. The Contractor shall supply all the materials and labour to supervise, operate, keep in operation, adjust, test service, repair and do all things necessary to keep the plant running. This is inclusive of the provision of such labour on a 24 hour – a – day basis during the period of Contract.
- iv. During this period, all the equipments should be checked for Vibration, Noise Level and alignment. Contractor shall take immediate steps to rectify the deficiency if found without any extra cost to BHEL.
- v. The Contractor should supply chemicals like hypo chlorite solution for disinfection and any other chemicals if required for stabilizing the process.
- vi. During the period of trial operation, the contractor has to stabilize the total treatment and prove the results as stated for the post treatment. The contractor has to get the samples (both inlet and outlet to plant) analysed once in a week from pollution control board (PCB) or any other approved laboratory to establish the results. Parallel sampling will be done by BHEL to cross check the results.

Note:

- a. The tenderer is responsible for any defect in the equipments (mechanical & electrical) for a period of one year after satisfactory commissioning of the complete works. In case of any defects coming to the notice within this period the same shall be made good by the Contractor at no cost to BHEL.

- b. Various items of work have been only briefly described in the scope of work and some of the minor items may not have been described. The contract being a lump sum turnkey one with respect to design, supply, erection & commissioning of Electrical and Mechanical equipment and related civil works the contractor shall indicate all the details and Technical Specification in their offer and execute the works in all respects for satisfactory operation and maintenance of the plant to the full satisfaction of BHEL.
- c. Operation & Maintenance manual should be specific to the equipment supplied by the contractor including operation and trouble shooting of treatment process. The following points should be covered in the O & M manual:
 - 1. Brief description of overall plant operation including chemicals preparation and handling, trouble shooting methods, etc.
 - 2. Operation and maintenance of all equipment both mechanical and electrical.
 - 3. General Safety precautions to be taken during the plant operation
 - 4. Periodical preventive checks/maintenance to be conducted for all the equipment for long running life along with the schedule.
 - 5. Power requirement, equipment wise and the total Power requirement per day/hour.
 - 6. General arrangement drawing of all equipment (As built) preferably in A4 / A3 size.
 - 7. Power panel wiring diagram for housing electrical installations for motors and aerators.
 - 8. List of Agencies with full correspondence addresses for supply of spares, equipment wise.
- d. The tenderer shall furnish a schedule for submitting process layout, hydraulic profiles and equipment GA drawings within a week of award of Contract.

2.2 Operation and Maintenance (one year)

- i. The scope includes Operation & Maintenance of all the equipments including the process treatment for a period of one year.
- ii. After successful completion of trial operation (one month) including performance test of equipment, the Plant should be operated for a period of One year on 24 hours basis including preventive, breakdown maintenance, etc.
- iii. Supply of all the materials, Spares, tools and labour to supervise, operate, keep in operation, adjust, test service, repair and do all things necessary to keep the plant running.
- iv. Supply of hypochlorite solution for disinfection, other chemicals and other laboratory chemical, test kits and glass beakers for performing onsite tests to assess the quality of treatment and for plant control.
- v. The Contractor should maintain operation log book, recording details like duration of pumps operation quantity of chlorine solution and any other chemicals consumed per day, Break down maintenance, etc.
- vi. The parameters like pH, DO, residual chlorine, etc should be checked on daily basis for the inlet raw sewage and final treated sewage after Chlorination. The contractor has to keep all equipment necessary for testing the above parameters at the plant site.
- vii. Once in a month, composite samples should be collected at the inlet of raw water sewage, inlet of MBR tank and after treated sewage storage tank and get it tested from the PCB or any other approved laboratory for pH, TSS, TDS, COD, BOD5@20°C, Oil & Grease, Residual Chlorine, etc.
- viii. 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 sewage as ensured by the tenderer, the Contractor shall immediately take steps to rectify the deficiency without any extra cost to BHEL.

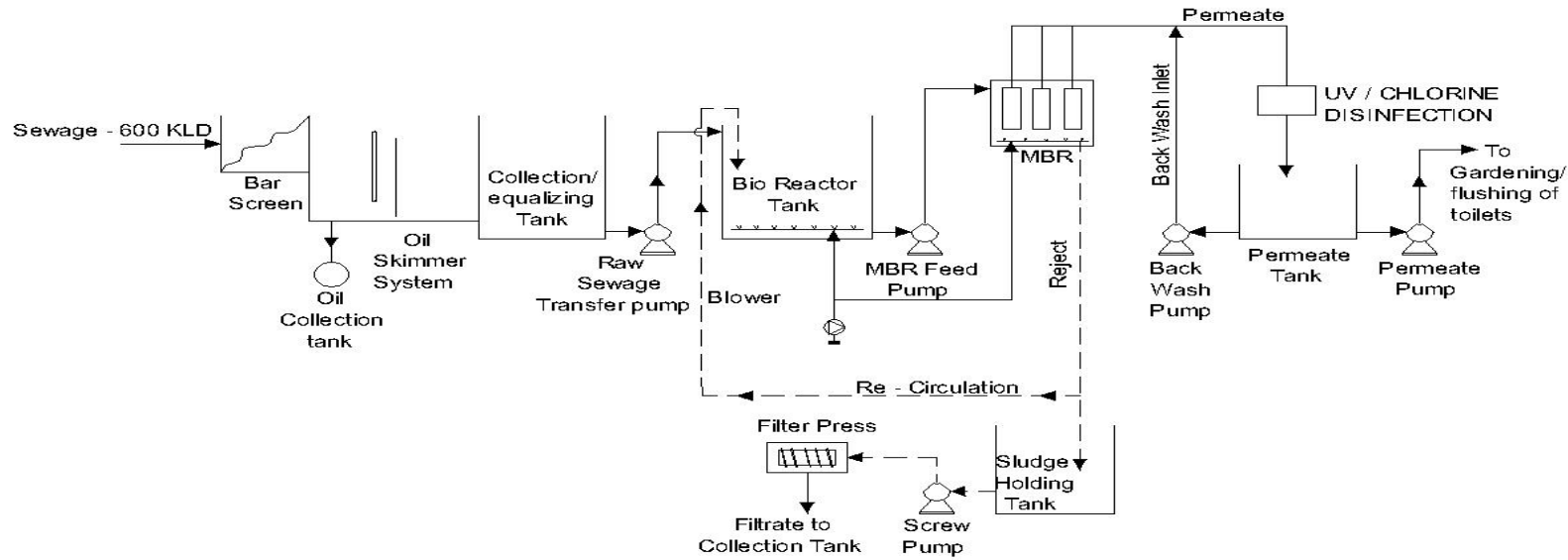
Exclusions:



- 1. Disposal of sewage from treated sewage storage tank

Note: Power supply will be provided at one point in the control room.

CAUTION: THE INFORM ON THIS DOCUMENT IS THE PROPERTY OF BHEL. IT MUST NOT BE USED DIRECTLY OR INDIRECTLY IN ANY WAY DETRIMENTAL TO THE INTEREST OF BHEL.

Indicative Process Flow Diagram



		Bharat Heavy Electricals Ltd UNIT: HIGH PRESSURE BOILER PLANT TIRUCHIRAPALLI - 620014			DRN	NAME <i>M. Thamilarasi</i>	SIGNATURE	DATE	NO. OF VAR
					CHD	<i>T. Aaruyiryogaa</i>			
					APPD	<i>K. Gunasekaran</i>			
DEPT CIVIL	GRADE OF UNTO. DIM C/M/F		SCALE 1:2	WEIGHT (Kg)	REF TO ASSY / OLD DWG			ITEM NO	No. OF ITEMS
CODE 2200					DRAWING NO : 4-TP-CEG-00512				REV
TITLE INDICATIVE PROCESS FLOW DIAGRAM FOR STP IN NEW PLANT				CARD CODE U 01					

CONTRACTOR

18

ACCEPTING OFFICER

Indicative Specification for Civil Units		
1	Bar Screen Chamber	Size and Numbers to be decided as per the design requirements
2	Oil and Grease trap / Oil skimmer system & oil collection tank	
3	Collection tank (Equalization tank)	
4	Bio Reactor Tank	
5	MBR Tank	
6	UV disinfection / Chlorine disinfection system	
7	Treated water Tank	
8	Sludge holding Tank & filter press	
9	Pedestal for all electro mechanical items	
10	Fencing	
11	Office cum control room	

Indicative Specification for Mechanical Units

The items and specifications given below are indicative. However the tenderers has to give the itemwise Mechanical and Electricals Units with specification in their offer.

1) BAR SCREEN	
No of units	One / Two as per the requirement
Size and No. of chamber	As per the Design requirement
Material of construction	MS Epoxy / FRP / galvanized MS
Make	HECS / Equivalent
2) a) OIL AND GREASE TRAP / OIL SKIMMER	
No of units	One
Size and capacity	As per the Design requirement
Material of construction of belt	Teflon
Make	HECS / Equivalent
b) OIL COLLECTION TANK	
No of units	One
Capacity	As per the Design requirement
Material of construction	HDPE
Make	Sintex / Reno / Equivalent
3) RAW SEWAGE TRANSFER PUMPS	
No. of units	One with 100 % Stand by
Capacity	As per the Design requirement
Type	Submersible, Non clog, Cutter
Head and Motor HP	As per the Design requirement
MOC	CI
Make	Grundfos / KSB/ Kishore / Johnson / Sharp
4) a) AIR BLOWER (for BIO Reactor & MBR Tank)	
No. of units	As per the Design requirement with Stand by
Type	Twin tube Rotary / equivalent
Capacity	As per the design requirement
MOC	CI
Make	KAY / Kirlosker / Equivalent
b) BLOWER Motar	
No. of units	As per the Design requirement with Stand by
Type & Capacity	As per the design requirement
MOC	CI
Make	Kirlosker / Equivalent

5) DIFFUSER	
Nos. Type & Capacity	As per the design requirement
MOC	EPDM
Make	HECS / Equivalent
6) MBR MEMBRANE	
No. of Modules	As per the design requirement
Type of filtration	Immersed ultra filtration
MOC	PVDF
Make	Hydranautics / TORAY / WACORP / Equivalent
7) MBR FEED PUMP	
No of units	As per the design requirement with 100% stand by
Type	Centrifugal, Non-clog
Head & capacity	As per the design requirement
MOC	CI
Make	Kirloskar / KSB / Grundfos / Equivalent
8) MBR PERMEATE PUMP	
No of units	As per the design requirement with 100% stand by
Type	Centrifugal, Monobloc
Head & capacity	As per design requirement
MOC	CI
Make	Kirloskar / KSB / Grundfos / Equivalent
9) MBR BACK WASH PUMP	
No of units	As per the design requirement with 100% stand by
Type	Centrifugal, Monobloc
Head & capacity	As per the design requirement
MOC	CI
Make	Kirloskar / KSB / Grundfos / Equivalent
10) SCREW PUMP	
Nos.	As per the Design requirement
Type	As per the Design requirement
Head & capacity	As per the design requirement
MOC	SS 304 & EPDM
Make	Tushaco / Equivalent

11) FILTER PRESS	
No. of units / chambers / plates	As per the design requirement
Type of capacity	As per the design requirement
Make	HECS / Equivalent
12) a) CHLORINE DOSING SYSTEM & TANK	
No. of units	As per the design requirement with 100% stand by
Type of capacity	As per the design requirement
MOC	PP / HDPE
Make	Prominent / Sintex / Equivalent
13) CITRIC ACID DOSING AND CLEANING DOSING SYSTEM	
No. of unit	Two
Type	As per the design requirement
Capacity	As per the design requirement
Dosing system MOC	PP
Dosing tank MOC	HDPE
Dosing system make	Prominent / Equivalent
Dosing tank make	Sintex / Equivalent
14) ULTRA VIOLET SYSTEM	
No. of unit	One
UV dosage & capacity	As per the design requirement
Type of Imp	Slim line / Equivalent
Disinfection efficiency	99%
MOC of Housing	SS 304
Make	HECS / Equivalent
15) INTER CONNECTING PIPES & VALVES	
No. of Units	As per design requirement
MOC	UPVC / CI / SS / GI
Make of UPVC	Finolex / Supreme
Make of GI	Jindal / TATA / Equivalent
Make of SS & CI	Any make as per IS specification with ISI Mark

CONTROL PANEL SPECIFICATION FROM MOTOR CONTROL CENTRE (MCC)

1	PANEL CONSTRUCTION	14 /16 MM (DOOR / LOAD MEMBER) CRCA
2	BASE FRAME	Sheet steel enclosure as per IS. 8623 3 MM folded construction
3	PANEL TYPE	MCC (Individual Compartment Type)
4	PAINTING	Pretreatment followed by powder coating Shade siemens grey – I s.631
5	BUSBAR	Aluminum of suitable rating with necessary Support
6	INCOMER	Suitable rating of FSU with necessary Door Interlock
7	INSTRUMENT	Digital voltmeter, ammeter with current Transformer, R – Y – B indication
8	MOTOR	Each D.O.L starter comprise of one no FSU Contactor, selector switches, over load relay illuminated start / stop Push Button, O/L trip indication lamp Each Star / Delta starter comprise of one no FSU Contactor selector switches over load relay illuminated start / stop Push Button, O/L trip indication lamp
9	WIRING	Suitable power wire minimum 2.5 sq. mm with Ferrule No, Socket terminal block control wiring 1 .5 sq mm 1100 volt grade
10	CABLE ENTRY	Bottom Removable Gland plate will be provided degree of protection IP – 54
11	FINISH	Both Interior and Exterior will be Light Grey Shade 631 OF ID – 5
12	BASE FRAME	Bright Black
13	FEEDER & CABLE CHAMBER DOORS	Hinged
14	BUSBAR CHAMBER DOOR	Bolted

MAKE OF COMPONENT

INCOMER (FSU)	:	TELEMECHANIQUE / L & T / SIEMENS
MPCB	:	TELEMECHANIQUE / L & T / SIEMENS
CONTACTOR	:	TELEMECHANIQUE / L & T / SIEMENS
ILLUMINATED PB	:	TELEMECHANIQUE / SIEMENS / MKAY
ANALOG VOLTMETER	:	RISHAB
ANALOG AMMETER	:	RISHAB
POWER WIRE	:	FINOLEX / QFLEX / KEI
PANEL TO MOTOR CABLE (COPPER ARMoured CABLE)	:	PARAGON /POLYCAB / KEI
CABLE LAYING	:	BURRIED CABLE or CABLE TRENCH WITH NECESSARY CABLE GLANDS
MOTOR EARTHING	:	25 X 3 mm GI PLATE (Double Earthing) and 8 SWG copper wire
PANEL INCOMER POWER	:	THREE PHASE NEUTRAL WITH SUITABLE ALUMINIUM ARMoured CABLE, MAKE – KEI
INCOMING EARTHING	:	EARTH PIT
PANEL TESTING	:	HIGH VOLTAGE TEST – AT THE TIME OF INSPECTION AT MANUFACTURING UNIT

Schedule of Payment

No advance payment is entertained. On each stage payment 10 % as security will be retained by BHEL till full security deposit as in clause 13 of the tender notice in price bid is reached.

I Civil Units	
a) On approval of design, construction drawing of all civil units and completion of bar screen chamber, collection / equalizing tank and oil skimming system.	25%
b) On completion of Bio reactor tank, MBR tank, Treated water tank	30%
c) On Completion of sludge holding tank, pedestal, office cum control room, disinfection system, etc.	25%
d) Fencing, Piping & inter connection with all fittings among civil units	20%

II Mechanical Units	Supply	Erection	Total
a) Bar screen, Effluent transfer pump, collection sump screening system, effluent feed pump, air-blower, diffusers, etc.	10	10	20
b) Membrane module, MBR feed pump, permeate pump, back wash pump, etc.	40	20	60
c) Sludge handling system including dosing, cleaning system, disinfection system, etc.	10	10	20

III. Electrical Units - On commissioning of the plant	100 %
--	--------------

IV. On successful Erection, Commissioning, trial run for one month of the system including Performance run for 48 hours continuously.	100 %
--	--------------

SHEDULE 'A'

LIST OF WORKS AND PRICES

NAME OF WORK: Design, supply, construction, erection and commissioning of Sewage Treatment Plant using Membrane Bio-Reactor technology (6 lakh litre per day) for New Plant at BHEL, Tiruchy.

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)		Period of contract
		Rs.	Ps.	
1.	Design, supply, construction, erection and commissioning of Sewage Treatment Plant using Membrane Bio-Reactor technology (6 lakh litre per day) for New Plant at BHEL, Tiruchy.			6 MONTHS

BILL OF QUANTITIES

Sl. No.	Appx. Qty.	Description of work	TNBP No.	Rate (Both in Unit fig & Words)	Amount Rs.	Ps.
---------	------------	---------------------	----------	---------------------------------	---------------	-----

AS PER SEPARATE SHEETS ATTACHED CONTAINING **2** PAGES

FROM SERIAL No. **27 and 28**

CONTRACTOR

26

ACCEPTING OFFICER

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

BILL OF QUANTITIES

NAME OF WORK: Design, supply, construction, erection and commissioning of Sewage Treatment Plant using Membrane Bio-Reactor technology (6 lakh litre per day) for New Plant at BHEL, Tiruchy.

Sl. No.	Quantity	Description of work	Rate (both in figures and in words)	Unit	Amount
1	1	Design, supply, construction, erection and commissioning of Sewage Treatment Plant (6 lakh litre per day) using MBR technology including evolving structural design and drawing vetted and approved by BHEL before starting the work. The quoted rate shall include design, drawing, construction including all civil, mechanical units , electrical units , all materials that go in to the work, conveyance of material, loading unloading & all other incidental charges etc complete., The scope also includes trial run for a period of one month, conducting continuous performance run for a duration of 48 hours including all consumables.			
a)	1	All Civil Units		SET	
b)	1	All Mechanical Units		SET	
c)	1	All Electrical units		SET	
d)	1	Erection, Commissioning & trial run for a periods of one month including conducting continuous performance test for a duration of 48 hours of the system		SET	

CONTRACTOR

27

ACCEPTING OFFICER

Sl. No.	Quantity	Description of work	Rate (both in figures and in words)	Unit	Amount
2	12	<p>Operation and Maintenance of 600 CUM capacity sewage treatment plant round the clock at BHEL, Tiruchy to treat the sewage from the plant .The scope covers deputing qualified and experienced operator for round the clock operation of the plant</p> <p>The operator is required to monitor proper functioning of all the equipments and the system in total for effective performance of the plant for better results. The scope includes operation of the equipments, attending to minor defects then and there, cleaning and lubricating the rotating parts periodically, maintaining the electrical systems such as panel board etc, dosing chemicals as directed by BHEL, collecting samples for testing, maintaining the log book for all the activities. Required number of operators are to be made available for round the clock shifts.</p>		PER MONTH	
NOTE:		<p>1 Service Tax will be extra if applicable for this contract. Service Tax paid by the contractor with respect to this work will be reimbursed by BHEL on production of documentary evidence for having paid the service tax.</p> <p>2 The period of contract is Six months. The contractor is required to plan accordingly and complete the work in time.</p> <p>3 The quoted rate shall inclusive of all civil works, materials like cement, reinforcement steel, structural steel and steel tubes which will be issued by BHEL on chargeable basis as indicated in Sl. No. 5. of preamble and Schedule B.</p>			
			TOTAL		_____

(RUPEES					ONLY)

CONTRACTOR

ACCEPTING OFFICER

SCHEDULE 'B'

1. The following materials will be issued on chargeable basis to the contractor at BHEL Stores / Stock yard.

SI.No.	DESCRIPTION	PLACE OF ISSUE	CHARGEABLE RATE
1	Cement	BHEL STORES or Stock yard	Rs.5,334/MT
2	M.S Rounds, C.T.D Bars	BHEL STORES or Stock yard	Rs.39,638/MT
3	Structural Steel	BHEL STORES or Stock yard	Rs.38,796/MT
4	Steel tubular sections	BHEL STORES or Stock yard	Rs.34,028/MT

2. It will be the responsibility of the Contractor to submit his demands for the above stores in writing atleast 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.

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	Remarks
--------	------	-------------	-------------------------------	-------------------------------	----------------	---------

.....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
1	BHE:CP:00:29/2007	Layout showing the location of STP at New Plant in BHEL, Tiruchy-14.

SCHEDULE 'E'

LEAD STATEMENT

Sl.No	Name of Material	Name of Source	Lead Particulars
1	Cement	BHEL Stores	2 Kilometre
2	M.S Rounds, CTD Bars & Structural Steel	BHEL Stores	2 Kilometre
3	Steel tubes	BHEL Stores	2 Kilometre

CONTRACTOR

30

ACCEPTING OFFICER

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

AUTHORITY TO TENDER

Tender Notice No. **07/10-11**

Office of the
SR. MANAGER/CIVIL /FACTORY (PLANNING)
BHARAT HEAVY ELECTRICALS LIMITED
TIRUCHY – 14.

Tender Schedule No. **16/10-11**

Item rate tender for work required “Design, supply, construction, erection and commissioning of Sewage Treatment Plant using Membrane Bio-Reactor technology (6 lakh litre per day) for New Plant at BHEL, Tiruchy.”

Messrs / Mr.

.....of.....

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, **up to 14.55 hrs. on 25.03.2011** addressed to the **Sr.Manager / Civil / Planning (Factory)**, BHEL. Thiruverumbur, Tiruchirapalli – 620 014 superscribing the name of work 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

Contract Agreement No.....

TENDER

To

The Sr Manager/Civil/ Factory (Planning)
Bharat Heavy Electricals Limited
Unit : Tiruverumbur
TIRUCHIRAPPALLI – 620 014.

I / We hereby offer to carry out the **Design, supply, construction, erection and commissioning of Sewage Treatment Plant using Membrane Bio-Reactor technology (6 lakh litre per day) for New Plant at BHEL, Tiruchy.**

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

- 1.Specifications (General & Particular)
- 2.Schedule 'A', 'B', 'C', 'D' & 'E'
- 3.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 & conditions contained or referred therein and as detailed in Schedule 'A' and Bill of Quantities annexure thereto and to carry out such deviations as may be ordered, vide conditions 6 of the BHEL Ltd., General Conditions of Contract up to a maximum of 20% of the tendered amount 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 sole discretion whose decision shall be final and binding.

WITNESS

Signature of the Contractor

Date :

- 1.
- 2.

GENERAL SUMMARY

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

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

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

(in block letters)

Date : SIGNATURE OF CONTRACTOR

Witness : Postal Address :

1.....
Address Telephone No.

2.....
Address

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

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

.....the said officer 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 here)

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 rates as indicated in Schedule 'A'.(Bill of Quantities)

SignatureDate.....

Designation

