

BHARAT HEAVY ELECTRICLES LIMITED
(A government of India undertaking)
Unit: High-Pressure Boiler Plant, boiler project P.O
TRICHIRAPALLI-14
COMBINED CYCLE DEMONSTRATION PLANT
NOTICE INVITING TENDER

01. Name of work : CCDP Barrier Filter System Erection work : 2010
02. Estimate contract value : Rs. 18.00 lakh (approx)
03. Earnest money Deposit : Rs 40,000/-
04. Security Deposit : As per Works Policy
05. Operations & Maintenance period: Three Months
06. Cost of tender document : NIL
07. Last date for receipt of tenders : On or before 02.11.10 at 14:30 hrs.
08. Date of tender opening : On 02.11.10 at 15:00 hrs

This document contains Covering letter, Spec., Terms & Conditions, Security Deposit details, Part-I (Qualification bid) and Part-II (Price bid).

Address :

BHARAT HEAVY ELECTRICLES LIMITED
TRICHIRAPALLI-14
COMBINED CYCLE DEMONSTRATION PLANT

BRFLTR:ERECTN:2010

Date: 11.10.10

Sir,

Sub: CCDP Barrier Filter System Erection Contract: 2010.

We are forwarding herewith one set of tender documents pertaining to the above work. You are requested to go through the Work Specification, General Terms & Conditions, visit the plant and assess the nature and quantum of work and then reply your competitive rates in two part bid. The contractor shall reply the technical competitiveness in Part-I and price bid in part-II in separate sealed covers. Both covers are to be put in a single sealed cover and submitted to BHEL on or before the specified date and time.

The Earnest Money Deposit amount of Rs 40,000/- (Forty thousand only) prescribed for the work shall be furnished in the form of Demand Draft from Nationalized / Schedule bank payable at Trichy, drawn in favour of BHEL /Trichy. The details of EMD kept inside shall be mentioned on the sealed cover. No interest shall be allowed on EMD

The due date and time for submission of your offer is at 14:30 hrs on 02.11.10. When the tenders received, technical bid (part-I) will be opened first 15:00 hrs, only eligible (technically qualified) contractor's price bid will be opened on the same day. BHEL/CCDP reserves all rights to reject any or all the tenders received without assigning any reason therefore. The scheduled period of work is 3 months (three months) from the date of award of work.

If you are in need of any further clarifications, please contact the undersigned on any working days between 09.00 am and 04.00 pm. In case you are not in a position to quote, please intimate the fact by return post duly returning the blank tender documents with your reply.

Thanking you,

Manager / CCDP

CC : SDGM / Finance

WORK SPECIFICATION
(Barrier Filter system erection contract)

Scope of work

1. The New Barrier Filter system shall be erected inside the old gas plant structures. For this requirement some of the components as listed in Table-A (vessels, pipe lines, supporting structures, platforms, equipments like motor, gears, shafts, housings, etc. weight approx 40 tons) are to be dismantled.
2. After dismantling work, Barrier Filter system components, as listed in Table-B (vessels, filters, equipments, pipe lines, structures, platforms, supports, valves, etc- approx. 100 tons) are to be erected.
3. The Reference drawing for erection work is 0-HGF-PPC-00011. The drawing will be supplied before starting the work.
4. The biggest single component to be handled for erection is Barrier filter vessel which weighs approx. 10 tons. Nitrogen storage tank 7.15t, Ash Lock vessel 6.6t, Atmospheric vaporiser 4.2t. All other components are ranging from 0.3t to 3.0t (Refer Table A & Table B)
5. The overall dismantling and erection height is in between 0.0m to 23.0m, as listed in Table-A and Table-B respectively.
6. All erection components listed in Table-B are to be supported suitably at site by cutting / welding / bolting / assembling, with proper alignment.
7. All erection materials/components are to be moved from stores to site location. The location of stores / store yard is around 300m
8. All dismantled materials and scrap materials shall be transferred to CCDP stores/stores yard, after getting clearance from the site in-charge.
9. Pipe welding shall be done only after the edge preparation as per standard.
10. The contractor shall arrange a temporary erection shed near the site, for safeguarding their tools/tackles and other items. Erection shed material is contractors scope.
11. All supports / brackets /platforms are to be fabricated and erected to match the site conditions
- 12. Tools :** The tools required for erection/dismantling is to be arranged by the contractor
The Contractor shall arrange following tools and machines required for erection work Crane / Hoists , Winches, Derric posts, transporting equipment, ropes and wires, Chain pulley blocks, desackles, drilling machines, hydraulic jacks, grinders, cutting machines, hammers, chisels, cutters, wire brushes, painting brushes, steel tapes, wrenches and erection spanners and regular spanners etc
13. The contractor shall bring welding shield and arc welding holder for welding works
- 14. Safety items :** The contract employees shall follow safe working procedures by using appropriate safety equipments like safety belts, safety shoes, gloves, safety goggles, helmets, welding shields, earplugs, nose filters, aprons, etc. All safety equipments mentioned above shall be supplied by the contractor.

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- 15. Completion Time** : The total dismantling & Erection time is only three months
- 16. Weding Electrode** : The electrodes used for welding shall be strictly as per drawing. All the welding electrodes are to be properly preheated. Preheating oven is contractor's scope.
17. All pipe lines / pressure vessels root joints shall be done by TIG welding process. TIG welding set with consumables shall be supplied by BHEL
18. All weld joints of pipes/vessels above 10" shall be X-Ray tested. For all other joints LP Test shall be carried out.
- 19. Consumables** : Welding electrodes, TIG wires, oxygen / acetylene cylinders, kerosene, paints, rustolene and other consumables, electric power supply shall be supplied by BHEL.
20. Welding machine, cutting set, TIG welding set and accessories shall be provided by BHEL
- 21. Hydro test** : After completion of erection, all vessels and pipe lines are to be leak tested/hydraulic tested at 15 kg/sqcm
- 22. Final Painting** : After completion of erection work, all pipe lines, vessels / equipments, components, structures, platforms, stairs etc are to be painted with one coat of primary (Red Oxide) and two coats of Grey paint. Supply of paint is BHEL's scope. Cleaning brushes and painting brushes are contractor's scope.
23. Payment will be made for actual dismantling wt. & erection of equipment.
24. Temporary platform required for erecting the components is not considered for weight calculation. These temporary platforms are to be removed after completing the components erection work.
25. Temporary platform material required for erecting components will be provided by BHEL.

Table - A

Dismantling of existing structure/platforms/equipments/piping

Sl No	Description	Elevation (meters)	Weight in Kg	Remarks
01	Removal of existing coal lock vessel ø1200x1500	18-30 m	6500	
02	Removal of existing Pipe Ø108x8x35RM	18-30 m	700	35 RM
03	Removal of supporting structures- channels and beams.	18-30 m	1000	
04	Removal of motor mounting platform.	18-30 m	300	
05	Removal of Motor & gear box	18-30 m	400	
06	Removal of shaft supporting structure.	18-30 m	500	
Contractor			Issuing Officer	

07	Removal of shaft housing.	18-30 m	300	
08	Removal of shaft - above gasifier	18-30 m	600	
09	Removal of gear wheel	18-30 m	1000	
10	Removal of shaft top housing.	18-30 m	300	
11	Removal of coal feeding pipe.	18-30 m	300	
12	Removal of unused pipe lines and valves. (rear side of gasifier)	18-30 m	1000	
13	Removal of VLH supporting platform	18-30 m	500	
14	Removal of motor, gear & supporting structure.	10-13 m	3500	Fixed bed Gasifier bottom 3 rd - floor
15	Removal of ash lock vessel.Ø1200x1500	7-14 ms	6600	
16	Miscellaneous items unforeseen like platforms/ structures/equipments to be removed at the time of erection.	0-30 Mts	14000	At the time of erection
	Dismantling Total weight		37500	

Table-B
Erection of structures/platforms/vessels/pipe lines etc

SI No	Description	Elevation (meters)	Weight in Kg	Remarks
17	Modification of Drum platform. (stair case and beam)	18-30 m	2000	
18	Modification of coal lock supporting structure.	18-30 m	2000	
19	Erection of Barrier filter Ø2000x8350	18-30 m	10000	
20	Erection of Blow Back Gas Receiver 1300x1750x3000	13.25 m	3000	
21	Erection of Nitrogen storage tank ø2100x8800 Ht.	0.00 m	7150	
22	Erection of atmospheric vaporizer 2200-Lx2300-Wx5200- Ht. qty-2	0.00 m	4200	Wt. given for two nos.
23	Pressure build up coil for N ₂ tank 2400-Lx1400-Wx800-Ht	0.00 m	300	
24	Reciprocating pump 2000-Lx500-Wx1000-Ht.	0.00 m	500	
Contractor		Issuing Officer		

25	Erection of inter connecting pipe between tank to pump and pump to vaporizer 1½” (Ø48.3) Sch 10	0-9 m	300	20 RM
26	Auto switching system mounted on skid at outlet of two vaporizers. 3000-L; 2000-W; 1200-Ht.	0.00 m	700	
27	Erection of Ash lock vessel ø1200x1500	7-12 m	6600	
28	Erection of DP vessel ø1000x1800	7-12 m	1000	
29	Erection of Ash hopper 1800x1800x3500	2-7 m	1750	
30	Erection of ash pump ø1200x1800	3-5 m	1000	
31	Erection of Nitrogen gas Heating unit	18-23 m	1000	
32	Erection of Stair case	0-25 m	3500	
33	Erection of 10” valves with supports Qty-2 No	m	3000	Wt. given for 2 nos
34	Erection of 8” valves Qty-2 No	7-14 m	2200	Wt. for 2 nos
35	Erection of 4” dome valves	3-5 m	600	Wt. for 2 nos
36	Erection of 10” (Ø273) gas pipe line	3-30 m	1700	18.5 RM
37	Erection of 12” (Ø323.9) gas pipe line	m	3000	20 RM
38	Erection of 2” (Ø60.3) pipe line	2-12 m	2800	260 RM
39	Erection of Ø54x3.6 S.S.pipe line	2-12 m	500	10 RM
40	Erection of 1” (Ø33.4) pipe line	2-12 m	300	100 RM
41	Platform modification	18-30 m	11000	
42	Erection of gas bye-pass pipe line	7-14m	4000	
43	Misc erection of unforeseen items Structures/platform/equipment/piping	0-30m	17900	
	Erection Total weight.		92,000	

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GENERAL TERMS & CONDITIONS
(CCDP Barrier Filter System Erection work)

STATUTORY

1. **Minimum Wages** : The contractor has to pay minimum wages to his labourers as per Tamil Nadu govt. norms and produce copies of attendance records / wage registers.
2. **Labour Licence** : The contractor shall submit valid Labour Licence before starting the work
3. **PF & ESI** :The contractor has to remit PF and ESI for the actual labourers engaged and produce the original challan every month along with bill for our record & verification.
4. The contractor shall not employ any one who has not completed 18 years of age.
5. The contractor shall comply with all state and central laws, statutory rules, regulations, inclusive of labour and industrial laws, which are applicable from time to time.
6. Any increase in minimum wage by Tamil Nadu Government, has to be implemented to the persons engaged by the contractor (including PF & ESI). For any reason, no increase in contract value shall be agreed.
7. **Gate Pass** : Pass arrangement for labours shall be arranged by the contractor before commencement of the work. The authorized person / supervisor of the contractor is responsible for making the pass arrangement.
8. The contractor has to produce certificates for skilled workers engaged.
9. **Insurance & workmen compensation** : The contractor shall insure his workmen under Workman compensation Act. It is the sole responsibility of the contractor to ensure his workman against accident and injury while at work. They have to follow relevant pay compensation rules in case of accident/injury.
10. **Income tax** as applicable shall be deducted from the contractor's bill
11. **Security Deposit** : Contractor shall pay 50% Security deposit before start of work. EMD can be adjusted for the above requirement. Balance 50% will be recovered equally in running bills

SAFETY

1. **Safety items** :The contract employees shall follow safe working procedures by using appropriate safety equipments like safety belts, safety shoes, gloves, safety goggles, helmets, welding shields, earplugs, nose filters, aprons, etc. All safety equipments mentioned above shall be supplied by the contractor.

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2. **All workers should compulsorily wear safety shoes and helmets at work site.**
Contract worker not using safety shoes, safety helmets, safety belts at height and not using other appropriate safety items for the respective work will be viewed seriously and they will be sent out.
3. The contractor shall ensure that no damage is caused to any equipment at the site. If any such damage is caused, it is the responsibility of the contractor to make good the losses or compensate for the same.
4. Scaffolding shall be done by the contractor with their own scaffolding materials.
5. They have to strictly follow BHEL Engineers safety instructions whenever pointed out.
6. Height permit shall be obtained from the Engineer In-charge to carry out the work at high elevations.

ERECTION WORK

1. **Man power :** The contractor has to engage sufficient skilled workers (Riggers, Fitters, High pressure Welders and structural welders) and helpers to complete the work within three months time
2. **Supervisor :** The contractor shall engage supervisor / Engineer for achieving overall quality, speedy and smooth work coordination.
3. **Erection Shed :** Contractor shall arrange a temporary erection shed with door/locking arrangement, using his own material for storing his tools and tackles
4. Pipe welding shall be done only after the edge preparation as per standard.
5. Proper electrode shall be used for welding joints based on grade/ type of material.
6. Preheating of electrode as recommended by the electrode manufacturer shall be carried out prior to welding.
7. **Consumables :** Welding electrodes, oxygen / acetylene cylinders, kerosene, paints, rustolene and other consumables, electric power supply shall be supplied by BHEL .
8. Welding machine, cutting set and accessories shall be provided by BHEL .
9. The contractor shall bring welding shield and arc welding holder for welding works.
10. All erection materials are to be moved from stores to site location
11. All dismantled materials and scrap materials shall be transferred to CCDP stores after getting clearance from the site incharge.
12. **Tools :** The Contractor shall arrange following tools and machines required for erection work Crane / Hoists , Winches, Derric posts, transporting equipment, ropes and wires, Chain pulley blocks, desackles, drilling machines, grinders, cutting machines, hammers, chisels, cutters, wire brushes, steel tapes etc.
13. **Completion Time :** Total work is to be completed in three months. Timely completion of work is very important. Hence the contractor has to engage sufficient no. of workers. As per the instructions of site Engineer, if sufficient workers are not brought to the work spot, penalty will be imposed for the delay caused at 10% of contract value and it may even be extended to termination of the contract.

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14. **Delayed execution** : In case work schedule unreasonably delayed because of non availability of sufficient man power and non availability of tools, contract will be terminated and balance work will be got done through some other contractor at their risk & cost.
15. **Hydro test** : After completion of erection, all vessels and pipe lines are to be leak tested/hydraulic tested at 15 kg/sqcm
16. **Defective work** : The contractor shall rectify the defective work at free of cost any time during one year from the completion of work

GENERAL

1. The contractor shall be responsible for the proper behavior and observing all rules and regulations by the labour employed by them.
2. **Canteen** : BHEL rules will be applicable towards issue of refreshments /food which will be adhered by the contractor. As per existing procedure for Canteen facilities, the lunch / dinner coupon shall be issued @ Rs.5 (Rs. Five) per person. Sufficient and valid coupons are to be tendered for Tiffin, Tea, Coffee, Milk, etc. to the canteen staff.
Evening snacks will not be provided to the contract employees. In case BHEL is unable to provide canteen facilities, contractor has to arrange from outside.
3. **Offer validity** : Offer validity shall be minimum 90 days from the date of Tender opening.
4. **Advance Payment** : No advance payment shall be arranged for this contract
5. **Payment**: Payment shall be arranged in three running bills at an interval of one month. Third one will be the final bill.
6. The contractor is directly responsible for the payment of wages to his workmen.
7. Dismantling and erection work shall be carried out normally in General shift. If required working may be extended up to 20.30 hrs, after getting permission from the security Dept. BHEL engineer's instructions to be followed for safe and early completion of work.
8. The contractor should submit an acceptance letter for the above terms and conditions.
9. **Qualification criteria** : The tenderer should have executed a similar single contract of value not less than Rs 6 lakh per year. Technical/Qualification competitiveness will be evaluated by technical committee and based on their recommendations only price bid will be opened. If the Tenderer fails to satisfy qualifying criteria (both explicitly and implicitly stated) their offer will be rejected.

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WORKS POLICY

8.2 Security Deposit:

8.2.1 Security deposit should be collected from the successful tenderer. The rate of security deposit will be as given below:

- Upto Rs. 10 lakhs - 10% of work order value.
- Above Rs. 10 lakhs upto Rs.50 lakhs - 1 lakh +7.5% of the amount exceeding Rs. 10lakhs.
- Above Rs. 50 lakhs Rs 4 lakhs + 7.5% of the amount exceeding Rs. 50 lakhs

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

8.2.2 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 discharge 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 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 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.

Security Deposit shall not be refunded to the contractor except in accordance with the terms of the contract.

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PART-I
(TECHNICAL BID)

Note : Contractors shall fill all columns without fail. If required enclose extra details/particulars. Visit the site and take certificate for enclosing.

1. EMD : Enclosed / Not enclosed
2. Details of years of experience in the similar function :
3. Quantum of business :
 - a) Similar Contract last year value:
 - b) Last three years contract value:
 - c) Details of present contract under execution:
4. No of Man power available :
 - a) Riggers :
 - b) HP Welders:
 - c) Structural welders:
 - d) Fitters :
 - e) Helpers:
5. Any instance of termination of contract in the middle :
6. PAN card No.:

7. ESI No.:

8. PF. Account No.:

9. Financial Position (solvency certificate for 6 lakhs) :

10. Whether visited the site and assessed the work content (enclose site visit certificate) :

11. Permanent address of the Firm as well as the Contact details of Chief personnel :

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PART - II

(Price Bid)

To
BHEL / TRICHY

Sir,
Sub : CCDP Barrier Filter System Erection Work

We hereby confirm having gone through the Tender enquiry in detail and visited site conditions, we are pleased to submit our most competitive offer as follows

Name & Address of the Contractor :

Sl.No	Description	No of tons	Cost per Ton Rs.	Total cost Rs.
1	Dismantling cost of vessels, pipes and supports	37.50 tons		
2	Erection cost of vessels, supports, platforms	72 tons		
3	Erection cost of 1/2" to 2" piping	5 tons		
4	Erection cost of 10" to 12" piping	6 tons.		
5	Erection cost of valves (6nos)	9 tons		

Contractor is requested to fill their address and quote their competitive rates in the respective columns

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CHECK LIST

Documents to be included in **Part I qualification bid (sealed cover)**

1. Documentary evidence as per qualification Criteria (Order copy, Bill copy, payment voucher, site visit certificate, bank solvency certificate etc)
2. EMD as per Tender
3. Tender documents signed in all pages
4. Part-I Technical/Qualification bid
5. Income tax PAN copy and latest IT return copy
6. Latest solvency certificate

Documents to be included in **Part II Price bid (sealed cover)**

1. Part-II Price bid duly filled in with Address and Signature

BHEL : CCDP
TRICHY

CERTIFICATE

This is to inform you that I have visited the site on and fully understood the work nature, the rates are quoted based on this and I will not ask for any revision of rates / contract value during the tenure of the contract.

Authorized person with seal