

GOVERNMENT OF INDIA
BHABHA ATOMIC RESEARCH CENTRE
FUEL REPROCESSING DIVISION

PP, NORTH SITE,
TROMBAY,
MUMBAI-400085

NIT No: BARC/FRD/MAINT/MF-29/2017/OPA-155178

Date: 05.09.2017

Notice inviting tender (Minor fabrication)

Sealed quotations are invited for and on behalf of the President of India by the Head, Fuel Reprocessing Division, BARC for the following work **from experienced contractors** having adequate experience, staff with valid PVC, and capability to execute such magnitude and similar works and who have similar experience with different units of DAE, Government organizations, Public Sector Undertakings, reputed public/ private organizations etc.

Description of work : Operation & testing of IBR Boilers (2 Nos.) water softener system, Furnace oil system and steam utilities at FRD, BARC, Trombay, Mumbai- 400085

Period of job :- 9 calendar months from the date of issue of work order

1. The tenderer may contact on telephone no. 25593123/ 25593101 to make necessary security permit for submission of their application along with their company work profile.
2. Enquiry will be issued to the eligible tenderer from 05.09.2017 to 12.09.2017_ between 10.00 hrs. to 16.00 hrs. between (Monday to Friday).
3. Sealed quotations (ONLY through **registered post/speed post of the Indian postal service**) will be received up to 14.09.2017 at 13.00 Hrs and will be opened on the same day at 14.30 hrs. Late quotations will not be accepted.
4. Sealed quotations shall be send by **registered post/speed post of the Indian postal service** to the following address:-
The head,
Fuel Reprocessing Division, Kind Attn: Shri M.M.Purushothaman, Supdt(M)
Bhabha Atomic Research Centre,
Trombay,
Mumbai -400085.
5. **Please clearly mention a) "Quotation for the work- name of the work b) tender notice reference number, etc. on the sealed envelope of your quotation. Otherwise the tender/quotation shall be summarily rejected.**
6. BARC reserves right to reject any or all tenders/applications without assigning any reason thereof.

(J.S.Yadav)
Head, Fuel Reprocessing Division

ANNEXURE-1
TENDER TECHNICAL SPECIFICATIONS

Description of work: Assistance in Boiler operation (PP) in RTC shift.

1. Operations of fire tube boilers in round the clock shift.
2. Testing of safeties of boiler.
3. Testing of Mobrey water controllers, water level indicators, extra low water column and blow down of boiler.
4. Unloading of furnace oil from road tanker to furnace oil storage tank.
5. Transferring of furnace oil from storage tank to service tank on daily basis.
6. Regeneration of water softener.
7. Adding of boiler water treatment chemicals in dozing tank on daily basis.
8. Maintenance of boiler mountings, fittings, steam trap assembly with steam line.
9. Maintenance and overhauling of feed water pumps and fuel oil gear pumps.
10. Cleaning of furnace oil filters, water filters replacement of leaking gasket on boiler and on steam line.
11. Analysis of quality of feed water & Boiler water in every shift (checking of hardness, PH&TDS).
12. Operation of feed water pumps, oil pump, air blower, steam boiler, PRV station.
13. Distribution of steam by operation of steam stop valve, steam traps etc.
14. Logging of all operating parameter of steam boiler.

Scope of contractor: Contractor will ensure the safe and efficient of operation of the steam generation system in RTC shifts with IBR licensed, adequate qualified and trained 1st class or 2nd class boiler attendant in 432 tasks (each task will comprise of 8 hrs)

Note: Technical specifications of systems to be operated are as per annexure-II

Annexure-II

System 1) Two Nos. of IBR boilers Registration No: MR – 13426 & MR – 13496 description of boiler along with mountings & fittings as given below

S.NO	Description	Remark
1.	Boiler Type	Horizontal, Smoke tube, three pass, wet pack, oil fired multi tubular, package boiler
2.	Make	Thermax Ltd, Pune.
3.	Design code	IBR 1950
4.	Rating	6000 kg/hr. F&A 100 deg C
5.	Working Pressure	10.54 kg/cm ²
6.	Hydraulic test pressure	15.81 kg/cm ²
7.	Shell Diameter	2.4 metre
8.	Shell Length	5.5 metre
9.	Furnace type	Fully corrugated
10.	Dimension of stay tube	63.5 mm x 6.35mm thick
11.	Dimension of plain tube	63.5 mm x 3.66 mm
12.	Total no of smoke tube	127 nos.
	Boiler Mountings	
1.	Safety valves	2 nos. set pressure 10.2 kg/cm ² , 10.3 kg/cm ² respectively.
2.	Sight gauge glass	2 nos.
3.	Steam stop valve	150 NB class 300 - 1 no.
4.	Feed check valve	3 nos. disc type
5.	Blow down valve	Parallel sliding type – 1no
6.	Fusible plug	2 nos. Melting temp. 370 deg C (approx.)
	Boiler Accessories	
1.	Feed pump	Multistage centrifugal pump Cap.-12m ³ /hr. , Head – 130 m
2.	Forced draft fan	Centrifugal blower backward curved blade cap.- 105 CMM , Static pressure-490 mmwc
3.	Oil feed pump	Rotary internal gear pump cap- 1000 LPH, discharge pressure- 30 kg/cm ²
4.	Burner	Pressure jet type
	Pressure reducing valve stations	
1.	Total no. of pressure reducing valves	6 Nos.(different sizes) pilot operated pressure balancing type)
2.	Total no. of safety relief valves	6 Nos.(different sizes)

System -2) Water softening plant

1)	Type of Plant	Aqua soft Water Softener
2)	Capacity:	12 M ³ / hour
3)	Raw water hardness	50 PPM as CaCo ₃ (Bombay Municipal Supply)
4)	Guaranteed Effluent	Commercial "0"

5)	Regeneration	20to 30 days @ Normal Flow Rate
6)	Regeneration Time :(max.)	90 Minutes
7)	Regeneration:	NaCl @ 10 % conc. Per regeneration
8)	Method of Regeneration	Ejector
9)	Regeneration chemical	NaCl
	OPERATING PRESSURE	
1)	Normal	2.5 Kg/ cm 2
2)	Maximum	3.5 Kg/ cm 2
	FLOW RATES	
1)	Normal:	12 M3 / hour
2)	Minimum:	10 M3/ hour
3)	Maximum:	15 M3/hour
4)	Back wash:	16 M3/ hour
	CHEMICAL DOSAGE DETAILS (per batch of dosage)	
1)	Maxtreat 3100 L (Oxygen scavenger)	3.5 ltr.
2)	Maxtreat 3004 (pH booster)	4.5 ltr.
3)	Maxtreat 3221 (Anti_scalent)	3.5 ltr.
	OUTPUT WATER QUALITY REQUIRED	
1)	Total Hardness	<5 ppm CaCO ₃
2)	pH	8.5 – 9.0
3)	Total solids	200 – 300 ppm
4)	Alkalinity ratio	> 2.5 for NaSO ₄ / NaOH > 0.4 for NaNO ₃ / NaOH

System -3) Furnace oil storage tanks (FOST) & oil day tank

S.NO	Description	Remark
1.	Main storage tank type	Mild steel, horizontal, storage tanks of 65000 ltrs capacity
2.	Fuel stored	Furnace oil MV 2 confirming to IS 1593
3.	Pre heating of oil	Manually by steam heating with condensate

		removal system
4.	Transportation of oil to day tank	Automatic with internal gear oil pump – 2 nos. (one as standby)
5.	Oil receiving in tanks	From HPCL/IOCL/BPCL oil tankers of different capacity viz. 10KL, 12, KL & 17 KL etc. pumping to FOST through inbuilt pump in tanker, inlet piping with flow meter at our site.
6.	Frequency of moisture removal from tanks.	Once in a day
7.	Oil day tank	4.5 KL capacity day tank situated near boiler house & receiving furnace oil from FOST, storing & feeding to boiler through gear oil pump & prefilters.

Free issue of the material (if required)

- Nil

Equipment/ facility (provided by the user).

- Nil

THE GENERAL TERMS AND CONDITION.

1. The contractor/Bidder should guarantee for the workmanship as per the I.B.R. requirement .
2. Skilled man power should be employed under the qualified supervisor/service engineer, who should be well versed with the work and safety precautions to be adopted while working on IBR Boilers. His full presence during complete execution of work will be required.
3. All approval works at different stages is to be carried out by contractor.
4. Taxes, EPF, ESIC contributions:-
 - i) Contractor should be registered under Goods & Service Tax (GST) and GST as applicable as per the extent order on the subject on the above work shall be paid by the contractor to concerned Department .
 - ii) The quoted rate shall be inclusive of GST / Sales Tax or any other Tax on material & services in respect of this contract and shall be payable by the contractor and Department will not entertain any claim whatsoever in this respect.
 - iii) Income tax @2% and surcharge on income tax as applicable will be deducted from your bill.
 - iv) Contractor should be registered under EPF & ESIC and as per law, or if Department asks for, then contractor shall pay EPF & ESIC of contract workers to concerned Department and it will be reimbursed to him by the Department after satisfying that it has been actually and genuinely paid by the contractor. The bidder should not consider EPF & ESIC in his rates
 - v) Any other taxes /cess as per Government directives shall be deducted from each bill paid to the contractor, from time to time.
5. The quotation is to be filled in the given format complete with seal and signature .
6. Removal of all derbies / waste generated from the site to specified location (within 1 K.M. lead) as directed by /Engineer-in Charge is in the scope of contractor .
7. Due to site constrain any minor deviation is to be carried out without increase in price and it will be in the contractor scope.
8. Compensation for delay:-In the event of grant of extension of time, the Government shall be entitled to recover at its discretion from the contractor agreed liquidated damages at ½% (half percent) per week of the total value of the work in areas subject to a ceiling of 10% of the total value of the contract whether any loss is suffered by the Government on account of such delay or not.
9. Payment terms should be clearly specified and validity of the offer should be min 30 Days .

Note: **Time schedule should be followed strictly by the contractor.**