दूरभाष :
TELEPHONE : 91-22-25594733 (Off)
तार : बार्क-मुंबई
TELEGRAMS : BARC-MUMBAI, CHEMBUR.
टेलेक्स : ०११-६१०१७/०११-६१०२२ बार्क इन
TELEX : 011-61017/011-61022 BARC IN
फेक्स संख्या : 91-22- 25505151
FAX NUMBER

सत्यमेव जयते
भारत सरकार
GOVERNMENT OF INDIA
भाभा परमाणु अनुसंधान केन्द्र
BHABHA ATOMIC RESEARCH CENTRE
Chemical Engineering Group
Membrane Development Section

ट्रॉम्बे,
मुंबई-४०० ०८५.
TROMBAY,
MUMBAI-400 085

Dr. Hemant Sodaye
Scientific officer/ F
E-mail: hemant@barc.gov.in

Due date: 13/06/2018

Ref: BARC / ChEG / MDS/ HS / F & R- 5 /2018 /GPA-108074 **Date:** 01/06/2018 **28/ 05/ 2018**

To,

Whomsoever it may concern.

Sub: Invitation to submit your quotation

On behalf of the President of India, **Head Membrane Development Section (MDS), Chemical Engineering Group (ChEG)**, Bhabha Atomic Research Centre invites quotation in sealed envelope for the work given below as per the technical specifications enclosed in Annexure-1.

S. No.	Description of Job	Completion Period
1	**Fabrication & supply of Bipolar Electrodialyser unit with titanium expanded mesh electrodes.**	**2 (Two) months from the date of issue of work order**

The terms and conditions are given below:

1. Firms willing to bid for above mentioned job shall have been vetted by Security Section of BARC.
2. All the supervisors and workers should have valid Police Verification Certificate (PVC). The list of manpower available with firm shall be submitted along with their details of PVC with quotation.
3. The past experience of the firm in similar nature of work in BARC/DAE shall be made available work order copy and satisfactory completion certificate from the user. Also the list of ongoing jobs inside BARC premises with expected completion period shall be provided.
4. Interested bidders shall contact the undersigned on Phone No. 25594733 (Ext. No.24733/25602) with above mentioned details for getting the Detailed Tender Specification. Bidders shall submit a requesting letter in companies letter head for getting the Detailed Tender Specification.
5. The quotation envelope shall be superscripted with Description of the job and the Tender Ref. No. mentioned above.
6. The complete quotation shall reach the following address on or before **16:00–Hrs - 13/06/2018,** by **only by Registered India Post/ India Speed post.**

Head Membrane Development Section (MDS)
Chemical Engineering Group (ChEG),
DD office, DD complex,
Bhabha Atomic Research Centre,
Trombay, Mumbai- 400085
Kind Attention: **Dr. Hemant Sodaye, Scientific officer/ F**
Due date of submission on or before : 16:00 hrs,**13/06/2018**

7. **Printed Letter Head**: Quotation should be printed on the letter head; computer generated quotation is not valid.

8. **Validity of the Offer**: Validity of the offer shall be 120 days from date of opening of quotation.

9. **Guarantee**: Vendor shall have to give guarantee of the quality and workmanship of work done for the period of 12 months from the date of completion of the work.

10. **Offer of Firm:** Offer of those firms, who do not submit their quotation as per the details given in the technical specification and incomplete quotations in any respect shall not be considered.

11. The department reserves right to extend the date of opening the quotations.

12. **Payment Terms:** Accounts Division BARC Mumbai-400085 shall make full and final payment only after submission of the satisfactory work completion certificate & site clearance certificate issued from the undersigned, bill, delivery challan and advanced stamped receipt. No advance is admissible.

13. **Income Tax Recovery Clause:** Income tax @ 2% will be deducted from the bill.
14. If any of the employee, consultant, or partner of the company is an Ex BARC employee, the same must be stated in the quotation clearly.

15. **Penalty:** Any delay which attributable to the contractor is liable for penalty @ 0.5 % per week (max 5 %) to be imposed on contractor.

16. **ST/VAT/PAN Number:** Quotation shall consist of Sales Tax Registration Number registered with local ST authority /CST authority, PAN number of the firm, service tax registration number etc.

17. **Quantity Variation Clause:** Quantity variation of ± 10% is possible during the execution of the job. Actual payment shall be made based on the actual work carried out by the contractor after completion of entire job.

18. **Safety & Security Rule:** The vendor shall follow all the safety procedures as per the normal industrial practice during the execution of the job at site. Any mishap occurring during the work due to unsafe workmanship shall be the vendor's liability. Security and transportation rules at BARC, Trombay premises shall be strictly followed.

19. **Confidential Clauses:**

i. Confidentiality: No party shall disclose any information to any third party concerning matters under this contract generally, In particular, any information identified as "Proprietary" in nature by the disclosing party shall be kept strictly confidential by the receiving party shall not be disclosed to any third party without the prior written consent of the original disclosing party This clause shall apply to the sub- contractors, consultants, advisors, or the employees engaged by a party with equal force.

ii. "Restricted information" categories under section 18 of the Atomic Energy Act, 1962 and "Official secrets" under section 5 of the of the Official Secret Act, 1923: Any contravention of the above mentioned provisions by any contractor, sub- contractor, consultant, advisor or the employee of a contractor will invite Penal consequences under the aforesaid legislation.

iii. Prohibition against use of BARC's name without permission for any publicity Purpose. The contractor or Sub contractor, consultant, advisor or the employees engaged by the contractor shall not be use any public purposes through any media like press, TV, or internet, without the prior written approval of BARC.

Thanking you,

Yours faithfully,

28/6/18

Dr. Hemant Sodaye
Scientific officer/ F
MDS/ChEG

Annexure-1
Technical specifications

Name of the Work	**Fabrication & supply of Bipolar Electrodialyser unit with titanium expanded mesh electrodes.**
Job No.	ChEG/MDS/HS/F&R- 5 /2018 dated 13/06/2018
Ref drawing no.	ChEG/MDS/HS/BPE/01- **For Detail Drawing Please Contact H. S. Sodaye, E-mail:hemant@barc.gov.in Ph 2559 4733**
Job completion period	Three months from the date of issue of work order
Place of work	MDS Laboratory, 2nd floor, DD complex , BARC, Trombay, Mumbai- 085.

1) The scope supply components for Bipolar Electrodialyser test set up is shown in the table below: 1 Set

Following components are to be supplied and assembly and testing the Bipolar Electrodialyser setup

Sr. No.	*Components*			Qty.
1.	**Electrolyzer cell assembly**			**1 Set**
		Sub Components	**Qty**	
	1.1	End support plate ,Size: (260 x 200 x 15mm) MOC:SS304	2 nos	
	1.2	Silicon sheet for support , Size:(190 x 130 x 5mm)	2 nos	
	1.3	Silicon gasket , Size: (190 x 130 x 5mm)	12 nos	
	1.4	Solution distribution header with inlet outlet port Size: (190 x 130 x 5mm)	6 nos	
	1.5	Titanium expanded mesh electrodes Size: (190 x 130 x 3mm)	2 nos	
	1.6	Positioning rod M 8 x 230mm long	4 nos	
	1.7	Tie rod (bolt) with two washer M16 x 240mm long	12 nos	

2) Job Description for all components:

2.1) Detail description for fabrication and assembly of Bipolar Electrodialyser cell assembly : 1 Set

(Drawing no.: ChEG/MDS/HSS/BPE/1 & Ref. Part no.-1, Sheet No.:09)

Purpose: The Bipolar Electrodialyser cell assembly shall be sued for the purpose of recovery of acid and base from the spent salts encountered in nuclear industry (e.g., $NaNO_3$, NH_4NO_3). The bipolar electrodialyser is used for circulating the salt solution as well as acid and base solution in a specific configuration. The bipolar membranes split water into H+ and OH- ions that is used for generating acid and base from salt solution by electro dialysis process using the bipolar electrodialyser unitconcentrating

2.1.1) **End support plate , Size: (260 x 200 x 15mm): 2 Sets**

- A plate (260 x 200 x 15mm) of SS316 material is to be used to make end support plate of cell assembly. The plate is to be made flat/leveled by pressing in hydraulic press. Then both surface of plate is to be machined in shaper /planner machine to achieve flat plane. Then 12 nos holes (13mm) are to be drilled with (75mm Typ.) maintain 35mm distance from edge of plate as per reference drawing. Then the plate is to be hardened to avoid the buckling under load at the time of bolting.

2.1.2) Supply of Silicon sheet , Size:(190 x 130 x 5mm) : 2 nos

Silicon sheet will be kept both side of Spacer (MOC: Silicon) to give support of end support plate as per reference drawing.

Features	Low viscosity, extended mould life ,moderately tough, good release properties
Colour	Colourless, Transparent
Base material	VTX 950
Catalyst	CAT 952 (0.3%)
Shore Hardness at 80°C	40A

It will be placed after the support plate and holes (ID: 6mm, pitch: 30mm) are to be cut as per drawing.

2.1.3) Supply of Silicon gasket, Size : 12 nos
Outer Size:190 x 130 x 5mm & Inner size :140x80x5mm

Silicon gasket will be kept both side of the solution distribution plate of all the section and both side of electrode. To arrest the leakage of solution. Specification will be same as above mentioned Point no.2.1.2

2.1.5) **Solution distribution header with inlet outlet port: 6 Nos**

Solution distribution header will be fabricated from a PP (H) plate of Size: (190 x 130 x 6mm) .All the surfaces of plate is to be machined in shaper /planner machine to achieve flat surface (±100micron).Then the port for solution inlet and out let of solution are to be machined as per reference drawing for all three stage of header. Slot is to be fabricated in 60mm length for well distribution of solution.

2.1.6) T**itanium expanded mesh electrodes: 2nos**
Electrode should be made of titanium expanded mesh electrodes

Size of electrode	**190 x 130 x 3mm**
Size of expanded mesh	80 X 140 X 3 mm thick
Material of electrode	Titanium,3 mm thick
Nature of Mesh	Tetragonal; about 16 per sq. inch

Electrodes should be provided with lugs for electrical connections as per reference drawing

2.1.7) Positioning rod with two washer M 6 x 230mm long: 4 nos

Position rod will be used to position /aligned all the components of the cell with support of end plate at initial tightening .So all the components can be aligned before tightened the cell.

MOC: SS304, Size: M6 , Length :240mm with two washer 4mm thick

2.1.9) Tie rod (bolt) with two washers M12 x 240mm long: 12 nos

Tie rod will be used to tightening the cell housing with support of end plate.

MOC: SS304, Size: M16 , Length :240mm with two washer 4mm thick

Threaded section of bolt will be 1/3rd of length.

2.1.10) Cell housing with locking nut:

Cell assembly will be kept in a PP housing and top section will be cover with two half PP plate.
Size: 350x350x260mm
MOC: PP with SS 304 support at bottom
Housing will be fixed by bolting (M10) with skid structure by four position.

Contractor should be fabricated/procured and assembled all the components as per technical specification and drawing.

3.0 Commercial Specifications

I. **Installation site**: The cell assembly shall be tested at MDS Laboratory, 400 B, 4th floor , DEF building, DD complex ,BARC, Trombay, Mumbai-400 085 .

II. **Quotation validity**: Quotation should be valid for a minimum period of 90 days from the due date of the tender.

III. **Quote Format**: Bidder is requested to quote for the above job on lump-sum basis with mention of applicable taxes. Quotation price format will be like Rs……..(Basic lumpsum cost) + Rs……applicable taxes = Rs……..(Total cost).

IV. A Xerox copy of PAN CARD,PVC of Proprietor or company is to be attached with quotation along with providing CST no./VAT no./ Service Tax Registration no./ etc. (whichever is applicable).

V. **Payment terms**: Payment shall be released within 30 days after satisfactory completion of work at BARC.

VI. **Mode of payment**: Payment will be released through ECS, the party has to fill the ECS/RTG form and submit with the delivery challan and Bill/Tax Invoice.

VII. **Site Clearance Certificate**: Scrap/garbage generated during the execution of work order are to be cleared-off by the contractor. A certificate in this regard has to be obtained from the indenting officer along with job completion certificate.

VIII. **Inspection Clause:** The work will be subjected to inspection by our engineers after completing fabrication work of each components (first stage inspection).

- Material, dimensional verification ,make for all the components of cell assembly

After satisfactory completion of first stage inspection all the components will be assembled and installed first at suppliers work place and then at our work place in MDS Laboratory, 2nd Floor, DEED campus, BARC with and performance.

4.0 Criteria for Evaluation of Tender:

4.1 Evaluation will be done based on consolidated price.

4.2 Technical suitable lowest consolidated offer will be considered for awarding the work order.

5.0 Specific Conditions of Tender

5.1 Bidders are requested to return the technical specification, drawing and envelop along with the Quotation.

5.2 Departmental free issue material: No free issue material is involved in this job.

5.3 Confidentiality Clause:

Confidentiality:-No party shall disclose any information to any third party concerning the matters under this contract generally. In particular, any information identified as "Proprietary" in nature by the disclosing party shall be kept strictly confidential by the receiving party and shall not be disclosed to any third party without the prior written consent of the original disclosing party. This clause shall apply to the sub-contractors, consultants, advisers or the employees engaged by a party with equal force.

Restricted information" categories under Section 18 of the Atomic Energy Act. 1962 and "Official Secrets" under Section 5 of the Official Secrets Act, 1923:-

Any contravention of the above-mentioned provisions by any contractor, sub-contractor, consultant, advisor or the employees of a contractor will invite penal consequences under the aforesaid legislation.

Prohibition against use of BARC's name without permission for publicity purpose:- The contractor or sub-contractor, consultant, advisor or the employees engaged by the contractor shall not use BARC's name for any publicity purpose through any public media like Press. Radio, T.V, or Internet without the prior written approval of BARC.

6. Security Rules:

a) Police verification certificates are required for supervisors and laborers deployed at the site.
b) Security rules and transport rules at BARC, Trombay premises shall be strictly followed.
c) Laborers below 18 years of age shall be not allowed to work at site.

Dr. Hemant Sodaye
Scientific officer/ F
MDS/ChEG