

Government of India
Bhabha Atomic Research Centre
Electromagnetic application and instrumentation division

Ref: BARC/EmA&ID/VT/20/115490

Date: 10/11/2020

-----To whom so ever it may concern-----

Sub: Engineering Support, fabrication of customized heaters, valves and its integration and testing of ADS Target facility at CFB, BARC.

Dear Sir/Madam,

1. Engineering Support, fabrication of customized heaters, valves and its integration and testing of ADS Target facility at CFB, BARC confirming to technical specification no. BARC/EmA&ID/VT/20/07 Dated 02.11.20

2. Bidder shall quote for engineering support and fabrication components as per tender technical specifications.

3. Taxes and Excise Duties shall be quoted separately. Form AF / H whichever is applicable shall be provided, if required.

The quotation must reach The Head Electromagnetic application and instrumentation division (EmA&ID) by 26.11.20 (12:00 PM) and must be sent in a sealed envelope super scribed with the reference number & the due date given above only through India Ordinary Post/Speed Post.

4. The address on the envelop should read: The Head,
Electromagnetic application and instrumentation division
RCnD Bldg., North Site
BARC, Trombay, Mumbai - 400 085
(Kind Attn: Vikas Tiwari, SA/E)

5. The bidder shall complete the job within 2 months from the date of firm work order issued to the bidder.

6. Head, Electromagnetic application and instrumentation division reserves the rights to accept / reject any or all quotations without assigning any reason.

7. Quotation must also indicate the validity of offer. Quotation must also indicate the GST No and PAN number of the supplier.

8. The quotation has to be signed by authorized person with company seal.

9. Payment will be made by EFT only after satisfactory completion of work on production of bill, delivery challan and advance stamped receipt. Income tax as applicable will be collected at the time of payment.

10. Vendor shall meet the indenter before quoting (Visit Time : 2.00 P.M. to 4.00 P.M.). Quotation without prior meeting with facility coordinator will not be accepted.

11. In case of any technical clarifications, the supplier may kindly contact the following:

Vikas Tiwari, SA/E, EMA&ID, (Email ID: vikast@barc.gov.in, Tel No: 25596899/6895)

12. Encl.: Technical Specification Sheet no: BARC/EmA&ID/VT/20/07 dated 02.11.2020

Vikas Tiwari

Indenting Officer, EmA&ID

Technical Specification

Ref. No.: BARC/EmA&ID/VT/20/07

Date: 02.11.2020

Engineering Support, fabrication of customized heaters and its integration and testing of ADS
Target facility at CFB, BARC

PART- A:-Scope of Work

1. Heater wrapping and insulation wrapping/unwrapping, replacement of malfunctioned heaters, various instruments etc. during maintenance of Hot Liquid Metal Lead-Bismuth-Eutectic facility. During Experimental analysis of loop, vendor has to give engineering support for operation, maintenance and calibration for various instruments. Actual no. of instruments calibration may be work-out during maintenance. Vendors having prior experience of handling high temperature liquid metal facility will be given preferences as Liquid Metal LBE (Lead-Bismuth-Eutectic) have very peculiar behaviour. Customized heaters length and power rating may be work out during technical discussion with facility in charge.
2. The engineering support is required to carry out maintenance of ADS mock-up loop. Skilled worker along with fitter required for the above mentioned work (**See Part-A sr. no.1**). Qualified welder required for fixing and welding of few components & instruments in the existing SS pipe lines. **Vendor may consider for executing this work considering 30 man-days for skilled and the same man-days for semiskilled personnel's.**
3. Replacement of HEPA and its integration with existing piping layout. HEPA test certificate is required and vendor may arrange BARC engineer for witnessing the test. Fabrication of HEPA along with its SS housing of different sizes with port for differential pressure measurement. Vendors may work out details plan during interaction with facility co-ordinator for its installation and its integration along with differential pressure transmitter.

Specification of HEPA:

- a) Size: 165mm*165mm**80mm
 - Rated air flow in cubic meter per hour=50
 - Pressure drop at rated flow =19mm of water gauge
 - Efficiency=99.99%
 - Qty-04
- b) Size: 300mm*300mm**150mm
 - Rated air flow in cubic meter per hour=212
 - Pressure drop at rated flow =20mm of wg
 - Efficiency =99.99%
 - Qty-02
- c) Size: 200mm*200mm*150mm
 - Rated air flow in cubic meter per hour=68
 - Efficiency =99.99%
 - Pressure drop at rated flow =11mm of water gauge
 - Qty-04

4. Vendor shall arrange Ultrasonic testing during maintenance of the facility to identify the location of Lead-Bismuth-Eutectic(LBE) freezing zone. Vendor may estimate 10 different visit over three months' period for carrying out UT of SS pipelines (Size- 1inch, 2 inch, 3 inch, Sch-40) containing LBE. Vendor may discuss this job in detail for executing the work at site with facility co-ordinator. The actual scope of work may be work-out during maintenance.

5. Standard items required as per following table

SR NO	PARTICULAR	SIZE (MM)	QTY (no/s)
1	Aluminum Chequered Plate Bar Pattern: high grip /Five bar Skid -resitance	2500 mm x 1200 mm x 3.00 mm thk	1
2	Aluminum I Beam	65 mm x65 mmm x 5mm thk* 12 Meters	1
3	Aluminum Rectangular pipe	100 mm *50mm*4mm*15 meters	1
4	MS plate plain	2400mm*1200mm*2mm thk	1
5	MS Chequered Plate	2495mm*1220mm*3mm thk	1
6	MS Flat Bars	100mm Width * 12mm Thk * 08 Meters	
7	MS circular Pipe Size 1”	Thk-1.5mm, 12 meters	3
8	MS Equal angle	40mm*40 mm*3mm*12 Meters	8
		40mm*40 mm* 5mm*12 Meters	8
		50mm*50 mm*5mm*12 Meters	8

6. Sensor required for cryogenic applications having following details:

Model: **CX-1050-SD-HT-1.4L**

Make : Cernox™ 1050 sensor

Package: SD package,

calibrated : 1.4 Kelvin to 325 Kelvin

(Qty- 06 NO.)

7. Tools and accessories

S.no.	Item name	Items specification	Make	Quantity
1	Tubing Cutter	Tubing Cutter 1/8" - 1 1/4" 3 - 31 10	93-021-22 Stanley make	01 no
2	Tubing Cutting wheel	Tubing Cutting wheel for SS 1/8" - 1 1/4" 3 - 31 11	96-250-1-22 Stanley make	02 nos
3	LOCKING PLIERS	LOCKING PLIERS Available as: Curved jaw 10"	Stanley make 84-369-1-23	01 no
4	Groove Joint Pliers	10" Groove Joint Pliers 65.5 10.3 257.7	Stanley make STHT84024-8	01 no
5	Combination Pliers	9" Combination Pliers 50.4 12.8 188.5	Stanley make STHT70487-8	01 no
6	Cutting Wheel	1 Cutting wheel 105* 1.2* 16bs mm (Aprox 1mm thk)	STA8060 Stanley make	20 nos
7	Hand Magnifier	Hand Magnifier 50 mm	Stanley make	01 no
8	Imperial Ball end hex key set	9 Pcs Imperial Ball end hex key set- long Part no 94-162	Stanley make	01 set
9	Union	Inert gas cylinder female to female union Material- Brass	Stanley make	05 Set
10	End cap	SS End cap for 25 mm union male cap		04 nos
11	Face Screen	Face Screen for grinding pupose	steelbird	01 no
12	Washer cutter	Washer cutter divider type For Teflon and viton	Plastic or metallic	01 no
13	Tungsten rod for TIG	Tungsten rod for TIG welding 3 mm(10 pack)	Stanley make	01 set

PART- B:-GENERAL REQUIREMENTS

1. The supplier shall workout a detailed design to meet fabrication requirements and work description, quantity and main fabrication material. They shall submit along with the offer all the salient features, material details of individual items and test qualifications report.
2. The items mentioned in **Part -A** shall be monitored before purchase of the same from the market. They shall be purchased and installed only after prior approval from BARC. Any component of inferior quantity purchased without prior approval will be rejected strictly.
3. The Supplier shall indicate in detail the standards adopted for the materials and processes and the quality control procedures followed by them.
4. Materials, tools, manpower etc required for the above work will not be supplied by the user. Supplier has to arrange the above on his own (No free issue material).
5. The supplier shall incorporate minor changes in the design as required at the time of execution of work at no extra cost.
6. The above job shall be done strictly under the supervision of our engineers.

PART-C: RAW MATERIAL PROCUREMENT

1. The raw material, electrical heating element etc. used by supplier for engineering support shall be of brand new.
2. All the material shall strictly confirm to their corresponding IS standards and shall be purchased only after prior approval from the purchaser.

PART-D: -REQUIREMENTS OF PRICE AND DELIVERY SCHEDULE

1. The complete job is expected to be completed in a duration of 3 Months.

PART-E: -CONFIDENTIALITY CLAUSE

1. 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 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 sub-contractors, consultants, advisors or the employees engaged by a party with equal force.
2. "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 the contractor will invite penal consequences under the aforesaid legislation.
3. Prohibition against the use of BARC's name without permission for publicity purpose. The contractor or sub-contractors, consultants, advisors or the employees engaged by a party shall not use BARC's name for publicity purpose through any public media like: press, radio, TV or Internet without any prior approval of BARC (wide circular ref.: 2/Misc-9/Lgl/2001/92 date 30/04/2001).