

Government of India
Bhabha Atomic Research Centre
Accelerator Control Division

Ref: ACnD/EMAS/17/319

Date: 05.05.2017

-----TO WHOM SO EVER IT MAY CONCERN-----

Sub: Engineering , Manpower support for integration and testing of water cooled electromagnet and its power supply inside BARC premises conforming to technical specification no: ACnD/EMAS/17/22 dated: 04.05.2017

Dear Sir/Madam,

1. Quotations are invited for engineering , Manpower support for integration and testing of water cooled electromagnet and its power supply inside BARC premises conforming to technical specification no: ACnD/EMAS/17/22 dated: 04.05.2017.
2. Bidder shall quote for purchase of raw materials, support for assembly, integration, and testing of water cooled electromagnet and its power supply as per the tender technical specification.
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, Accelerator Control Division by 19.05.2017 (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 Applications Section
Accelerator Control Division,
RCnD Bldg., North Site
BARC, Trombay,
Mumbai - 400 085.
(Kind Attn: S.Sundar Rajan, SO/F)
5. The bidder shall complete the job within 6 months from the date of firm work order issued to the bidder.
6. Head, Accelerator Control 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 VAT no and PAN no of the party.
8. Drawings / Sketches, technical specification must be returned along with the offer.
9. The quotation has to be signed by authorized person with company seal.
10. Payment will be made by cheque only after satisfactory completion of work on production of bill, delivery challan and advance stamped receipt. It may be noted that IT @ 2% shall be deducted from your bills.
11. In case of any technical clarifications, the supplier may kindly contact the following:
S.Sundar Rajan , SO/F , EMAS,ACnD (Email ID :sundara@barc.gov.in, Tel No : 25591851)

Encl.: Technical Specification Sheet no: ACnD/EMAS/17/ dated 15.11.2016

S.Sundar Rajan
S.Sundar Rajan

Technical specification

Document no.	Revision no.	Date of Issue	No of pages
ACnD/EMAS/17/22	0	25.04.2017	03

Engineering, Manpower support for integration and testing of water cooled electromagnet and its power supply inside BARC premises

1.0 SCOPE

Tender is invited for engineering, manpower support for integration and testing of water cooled electromagnet and its power supply inside BARC premises. The complete job shall be carried out strictly as per requirements, specifications and its compliance standards as detailed in this document. In this specification the supplier shall be referred to as the “supplier” and Bhabha Atomic research Centre shall be referred to as the “buyer”.

Supplier shall provide complete engineering support to carry out successful integration and testing of the water cooled electromagnet and the chiller unit. The supplier shall arrange for required raw material/ components etc required for testing of magnets with prior approval from purchaser. The supplier shall be qualified as per Para 7.0 of this document. The brief description of contents of the tender specification document is as described below.

Para 2.0 gives the detailed job description.

Para 3.0 gives the general requirements.

Para 4.0 gives the requirements for raw material procurement.

Para 5.0 gives the requirements of manufacturing and workmanship.

Para 6.0 gives the requirements of supplier qualifications.

Para 7.0 gives the requirements of packaging and safe delivery.

Para 8.0 gives the confidentiality clause.

2.0 DETAILED JOB DESCRIPTION

2.1 Engineering and man power support for integration and testing of water cooled electromagnets and its power supply

2.2 High stable DC power supply is installed inside BARC for testing of the electromagnets. Chiller unit of capacity 25LPM at 10 bar pressure is required. The output coolant temperature of the chiller unit has to be 24°C and the maximum inlet temperature of the chiller unit can be 40°C. One number of such chiller shall be installed and integrated with the high stable power supply.

2.3 The electromagnet requires chiller of 100 LPM at 5 bar maximum pressure is required. The output coolant temperature of the chiller unit has to be 24°C and the maximum inlet temperature of the chiller unit can be 40°C. One number of such chiller shall be installed and integrated with the high stable power supply.

2.4 Suitable piping headers (made up of AISI 304L material) for connection of the electromagnet coils (10-1 header -02 nos) with the chiller unit shall be provided. Piping of the electromagnet coils to the header shall be of PVC flexible hoses. The piping from the header to the chiller unit shall be of SS flexible hoses. Suitable filters, deoxygenation units, valves shall be provided in the loop. The same shall be approved by the purchaser before installation of the same.

2.5 The piping shall have leak proof Swagelok connectors at both the ends. The hoses and the pipes required shall be from reputed suppliers.

2.6 Suitable coolant of very low conductivity de-mineralized water, electrical conductivity less than 10 μ S/ meter and pH maintained at 6.25 ± 0.25 , Dissolved oxygen content in water should be < 100 ppb shall be supplied along with the chiller unit for testing of the power supply.

2.7 Electrical cabling and bus bar connection with current carrying capacity more than 700A shall be provided between the power supply and the electromagnet. Tools required for cable crimping's, lugs, shall be provided by the supplier.

2.8 Man power support shall be provided for assembly , integration and testing of the electromagnet. It is estimated to complete the above jobs within 120 working days and 02 nos of skilled and 03 nos of unskilled persons are required.

2.9 The skilled persons shall be capable of carrying out onsite TIG welding of the headers, pipe bending and inspection of the same. The unskilled persons shall be capable of carrying out fitting , assembly of the electromagnets.

3.0 GENERAL REQUIREMENTS

3.1 The supplier shall workout a detailed design to meet fabrication requirements and work description, quantity and main fabrication material. He shall submit along with the offer dimensional drawing giving all the salient features, material details of individual items and assembly view of the fixtures.

3.2 The Supplier shall indicate in detail the standards adopted for the materials and processes and the quality control procedures followed by them.

3.3 Supplier can suggest the color, aesthetics, and other details as suitable. Supplier must offer best quality/IS certified material only.

3.4 Supplier should have similar work experience and along with the offer, shall submit the details of past experience with documentary proof.

3.5 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).

3.6 The supplier shall incorporate minor changes in the design as required at the time of execution of work at no extra cost.

3.7 The above job shall be done strictly under the supervision of our engineers in test facility at BARC premises.

3.8 Working personnel shall observe all the safety precaution during working.

3.9 The working personnel shall behave well with other officers and workers inside BARC campus.

3.10 The contractor shall be solely responsible, in case of any casualty involving working personnel. However first aid will be provided by BARC.

3.11 General BARC security rules shall apply to all the working personnel.

3.12 Entry permit will be issued on weekly basis and contractor shall have valid photo pass with valid Police Verification certificate (PVC) as per the norms of BARC security.

3.13 Prior permission will be taken from security if the persons are required to do the job on Saturday, Sunday, Holidays and beyond normal working hours (08:00 to 18:00 hrs).

3.14 Job Location: CFB Building, New RCnD Building.

4.0 RAW MATERIAL PROCUREMENT

4.1 The raw material, electrical components used by supplier for the manufacturing of these components shall be of brand new and shall not be used previously.

4.2 The manifolds and the piping material shall be strictly AISI 316 as per ASTM 240

5.0 REQUIREMENTS OF MANUFACTURING AND WORKMANSHIP

5.1 Welding

5.1.1 All welding shall be performed by qualified welders in accordance with section IX of ASME code or approved equivalent.

5.2 General Guidelines to be followed during entire welding/fabrication:

5.2.1 Before welding all parts shall be cleaned initially with detergent and then with acetone or 1:1:1 Tri-Chloro-Ethane.

5.2.2 As specified in the drawings all welds which are to be done should be Tungsten argon arc welding (TIG) according to ASME – Sec. IX.

5.2.3 During welding high purity (99.99%) Argon purge gas shall be used to reduce or eliminate oxygen entrainment and carbide precipitation that cause outgassing.

5.2.4 Single pass weld up to a maximum extent is preferred. Interruption during welding shall be reduced to a minimum possible extent.

5.2.5 Filler material, if used, shall be compatible with the parent material and procured from original manufacturer. Bidder shall submit the material test certificate of filler material from the original supplier. Bidder shall take approval from buyers, for the use of filler material needed.

6.0 REQUIREMENTS OF SUPPLIER QUALIFICATIONS

6.1 The supplier shall be evaluated on the basis of the following criteria

6.1.1 The supplier shall have previous experience in carrying out similar such jobs inside BARC and copy /proof of the same shall be attached.

6.1.2 The supplier shall submit the details of the welder, fitter and other man power, facility available with the supplier to carry out the job successfully.

6.1.3 The supplier shall provide the list of their employees along with their valid PVC certificate, who are intended to work in this job.

7.0 REQUIREMENTS OF PRICE AND DELIVERY SCHEDULE

7.1 The supplier shall give a break up price for the raw materials and for man power to complete this job.

7.2 The complete job is expected to be completed in a duration of 06 Months.

8.0 CONFIDENTIALITY CLAUSE

8.1 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.

9.2. "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.

9.3. 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)