Government of India  
Bhabha Atomic Research Centre  
Electromagnetic Application and Instrumentation Division

Ref: BARC/EmA&ID/19/198765 Date: 23.10.2019

Sub: Fabrication, Assembly, Supply, packing, safe delivery of Water cooled Permanent Magnet Assembly confirming to technical specifications no: PMWCA-19 (As per annexure 1)

Dear Sir/Madam,

1. Quotations are invited for Fabrication, Assembly, Supply, packing, safe delivery of Water cooled Permanent Magnet Assembly confirming to technical specifications no: PMWCA-19 (As per annexure 1).

2. Bidder shall quote for deliverables as per technical specifications.

3. No Free Issue material is involved.

4. Taxes shall be quoted separately. Form AF / H whichever is applicable shall be provided, if required.

5. The quotation must reach The Head, Electromagnetic Application Section, Electromagnetic Application and Instrumentation Division by 11/11/2019 (12:00 Noon) and must be sent in a sealed envelope super scribed with the reference number & the due date given above. Courier are not allowed in BARC premises, the quotation shall be sent by speed post/registered post only.

6. The address on the envelop should read:
   The Head  
   Electromagnetic Application & Instrumentation Division, 
   RN&ID Bldg., North Site 
   BARC, Trombay, 
   Mumbai - 400 085 
   (Prashant Kumar, SO/D)

7. The bidder shall complete the job within 20 weeks from the date of firm work order issued to the bidder. The finished components shall be delivered by the bidder at Electromagnetic Application & Instrumentation Division, BARC, Trombay, Mumbai - 400 085.

8. Head, Electromagnetic Application & Instrumentation Division reserves the rights to accept / reject any or all quotations without assigning any reason.

9. Delivery charges if any must be clearly mentioned in the offer. Quotation must also indicate the validity of offer. Quotation must also indicate the GST no and PAN no of the party.

10. Drawings / Sketches must be returned along with the offer.

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

12. 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% and surcharge on tax at 15% shall be deducted from your bills.

13. The technical specifications no: PMWCA-19 will be made available only on request. The interested vendors may contact: Shri Vikas Teotia, SO/E, EMAS, EmA&ID (Email ID: vteotia@barc.gov.in, Telephone No: 022 2559 3943) for technical specifications. While making such a request, vendor should mention its address, PAN number and GST number. The vendor should also give undertaking that the technical specifications provided for this tender will not be shared with any party or person in hard or soft copy without the written consent of the purchaser. The specifications will be sent only through email. (Vendor shall send the attached annexure while requesting the technical specifications). Specifications will be sent within 24 hours of receiving the request.

Prashant Kumar  
I/O, EmA&ID

Encl: PMWCA-19
To be filled by the supplier while requesting technical specifications
(PMWCA-19)

Name and Address of the bidder:

PAN Number:

GST Number:

Undertaking: We certify that the technical specifications number PMWCA-19 shared with our company under this minor fabrication tender (Ref: BARC/EmA&ID/19/198765, Date: 23.10.2019) will not be shared with any party or person in hard or soft copy without the written consent of the purchaser (BARC).

Signature and Seal of the supplier with date
Fabrication, Assembly, Supply, packing, safe delivery of Water cooled Permanent Magnet Assembly confirming to technical specifications no: PMWCA-19 (As per annexure 1)

1. **Scope**

The tender is invited for the Fabrication, Assembly, Supply, packing, safe delivery of Water cooled Permanent Magnet Assembly confirming to technical specifications no: PMWCA-19 (As per annexure 1). Fabrication and qualification of complete system is in the scope of the supplier. 18 Permanent magnets are assembled inside the SS304 bobbin. There will be separate cooling loop, chilled water as medium, for each permanent magnet. A total solution for water cooled Permanent Magnet assembly under pressurized conditions for controlled temperatures of liquid inside the system. So that temperature of permanent magnet embedded inside the bobbin should not increase. It involves creating pressure for a controlled $\delta p$ and maintaining a temperature of liquid at a desired set value in a closed loop flow circuit. It also involves mechanical fitments, layouts.

a. Para 2 gives the Technical specification
b. Para 3 gives the details of FIM
c. Para 4 gives the brief description of the job
d. Para 5 gives the Vendor’s qualification
e. Para 6 Deliverables
f. Para 7 gives the General Specifications

2. **Technical Requirements**

The technical requirements are summarised in below mentioned table.

<table>
<thead>
<tr>
<th>S.No</th>
<th>Description</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Permanent Magnets ($\text{Sm}<em>2\text{CO}</em>{17}$, Dimension: 60mm X 13.6mm X 11mm)</td>
<td>18 No.</td>
</tr>
<tr>
<td>2.</td>
<td>Medium of cooling</td>
<td>Water</td>
</tr>
<tr>
<td>3.</td>
<td>Inlet temperature</td>
<td>20 degree Celsius</td>
</tr>
<tr>
<td>4.</td>
<td>Each Permanent magnets have separate cooling circuit</td>
<td>Water as a medium</td>
</tr>
<tr>
<td>5.</td>
<td>Bobbin (ID: 98mm, OD: 150mm)</td>
<td>SS304</td>
</tr>
<tr>
<td>6.</td>
<td>Sprocket to be cut in copper bobbin</td>
<td>By wire cut</td>
</tr>
<tr>
<td>7.</td>
<td>Nozzle fittings with flexible hose</td>
<td>As per standard</td>
</tr>
</tbody>
</table>

*The installation of the complete system is under scope of the supplier.* Control valves will be required before the inlet of magnets to control the flow rate flow. Also as the flow needs to be controlled, the analog output of the flow meter will be connected to the control valve.
3. Free Issue Material
   No free issue materials are involved.

4. Brief description of the job
   Temperature of Permanent magnets needs to be controlled by cooling water inlet at 20 degree Celsius. A heat exchanging unit with control parameters for cooling and heating of liquid is required with insulated reservoir for water cooler PM Assembly to be used.

5. Vendor’s qualification
   1. Supplier shall have in-house facility for carrying out fabrication and qualification of the components. Sub-contract is not permissible.
   2. The raw material shall be purchased along with the material test report before commencing fabrication.

6. Deliverables

<table>
<thead>
<tr>
<th>S. No</th>
<th>Items</th>
<th>Qty.</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Fabrication, Assembly, Supply, packing, safe delivery of Water cooled Permanent Magnet Assembly confirming to technical specifications no: PMWCA-19 (As per annexure 1)</td>
<td>01 Set</td>
</tr>
<tr>
<td></td>
<td>a. Water connectors with flexible hose</td>
<td>18 No</td>
</tr>
<tr>
<td></td>
<td>b. Inlet Header</td>
<td>01 No</td>
</tr>
<tr>
<td></td>
<td>c. Outlet Header</td>
<td>01 No</td>
</tr>
<tr>
<td></td>
<td>d. Permanent Magnets</td>
<td>18 No</td>
</tr>
<tr>
<td></td>
<td>e. SS304 bobbin</td>
<td>01 No</td>
</tr>
</tbody>
</table>

7. General Specifications
   i) Supplier shall enclose the complete specifications and compliance statement of the product being offered with the offer, without which the offer will be liable for rejection.
   
   ii) Overall cost will be compared and should include packaging, forwarding, and safe delivery to BARC stores.
   
   iii) Deviation from this Technical specification
        If, after the work order is placed, the supplier discovers that he has misinterpreted these Technical specifications, this will not be accepted as an excuse for deviation from it and the supplier shall deliver equipment in conformity with these technical specifications at no extra cost. During execution of the contract, all deviations proposed by the supplier from these technical specifications, the tender, or any other subsequent contractual agreement, shall be submitted to purchaser in writing. Purchaser reserves the right to reject or accept such proposals without justification.
   
   iv) Quality control records: All specified tests and measurements carried out during all stages of production, from raw material procurement up to delivery must be recorded in specific hard and soft files.
v) Factory access: Purchaser and its representative shall have free access during normal working hours to the manufacturing or assembly site, including any subcontractor’s premises, during the contract period. The place of manufacture as stated in the Appendix A may only be changed after written approval by purchaser.

vi) Tests to be carried out all inspections shall be carried out at supplier’s site. Purchaser reserves the right to be present, or to be represented by an organization of its choice, to witness any testing carried out at the supplier’s or its sub-contractor’s premises. Supplier shall give advance notice of such tests.

vii) Components failing in acceptance criteria: The purchaser will make payment only for components accepted as per acceptance criteria. The failed components shall be rejected and replaced.