

**Government of India**  
**Bhabha Atomic Research Centre**  
**Cryo-Technology Division**

MRG., CFB, Trombay,  
Mumbai. 400085

Ref: - CrTD/BARC/NK/18/OPA/190557

Date: 05/10/2018

**Tender No.:** CrTD/BARC/NK/18/OPA/190557  
**Tender Due Date:** 10:00 hrs, 20 October, 2018

Sub: Invitation of quotation for

**"Machining of Turbine Impellers as per specifications and drawings/Figures".**

Dear Sir,

1. Quotations are invited for minor fabrication/ repairs jobs as per the enclosed Technical specifications and General Terms and conditions as per the annexure.
2. Bidder shall quote for :- Machining of Turbine Impellers as per specifications and drawings/Figures. (Drawings/Figures will only be send by e-mail to the party after discussion with indenting officer, Ph:022-25596868).
3. Taxes should be quoted separately.
4. The Quotation must reach Head, Cryo-Technology Division by 10:00 hrs, **20 October 2018** and must be sent in the sealed envelope super scribed with the above reference number and the due date given above. Also the name of the work should be displayed on the envelope.
5. The address on the envelope should read: -  

Attn: Head Cryo-Technology Division  
278-H, CrTD Office, 2<sup>nd</sup> Floor, CFB,  
Bhabha Atomic Research Centre,  
Mumbai - 400 085
6. The bidder shall have to take an insurance policy against any material issued to him by the purchaser.
7. The Fabrication / Repair work shall be subjected to inspection by our Engineer at CFB, BARC and/or party's place.
8. The bidder shall deliver finished components after approval of our Engineer within 120 days from the date the firm purchase order is placed with the bidder. The finished components/equipments and the scrap from free issue material shall be delivered by the bidder at CFB, Cryo Technology Division, Bhabha Atomic Research Centre, Trombay, Mumbai 400 085.
9. Head, Cryo-Technology Division, BARC reserves the right to accept or reject any or all the quotations without assigning any reason.

  
Naveen Kumar(SO-D)  
BARC, Trombay

# Annexure -1

## TECHNICAL SPECIFICATION

### **Machining of Turbine Impellers as per specifications.**

All the components require high precision machining. The turbine blanks shall be machined on ultra-high precision lathe (e.g. CNC Spinner). The flutes of both turbine shall be machined on 5 axis CNC milling machine. The tolerances provided in the drawing shall be maintained as it is. High Precision Machining of components shall be done based on the enclosed drawings and other data supplied along with the drawings. 3D IGES files and required coordinates of different curves in excel file format will be provided to the party by the department (CrTD/BARC).

#### **List Of Required Components:-**

S. N.	Title of Components	Drw. No.	Material	Quantity Required
1	Turbine Impeller (T008)	BARC/CrTD/T008/1	Al 7075 T6	5
2	Turbine Impeller (T011)	BARC/CrTD/T011/7	Al 7075 T6	5
3	Turbine Impeller (T012)	BARC/CrTD/T012/8	Al 7075 T6	5

**Material of Construction:-** Material of components shall be as mentioned in the drawings/Figures. Party shall submit **test certificates for material chemical composition and mechanical properties** by the NABL approved laboratory for all the materials or party shall conduct the mechanical test (Tensile and Hardness) of each raw material rod from which component is to be prepared. Sample should be tested in presence of our engineer.

#### **Approvals:-**

(1) Party shall submit detailed **Machining procedure** and take approval from purchaser before proceeding with machining.

*Naveen Kumar*

(2) Party shall submit written **detailed quality assurance procedure** before proceeding with machining.

**Facilities required:-** All the above components require high precision machining. Supplier shall possess required precision machining facility. Tool room with ultra high precision lathe (e.g. CNC Spinner), 5 Axis CNC milling machine, with adequate measuring instruments to measure the given tolerances. The vendor must submit one sample of turbine impeller blank with one completed flute for verifying the technical capability of the vendor.

**Inspection:-** is required to be carried out by properly calibrated precision measuring instruments. Supplier shall give the detail list of machining and measuring facility which will be used to execute the above mentioned job. **Pre-dispatch inspection in presence of purchaser's engineer** for all the items shall be done after completion of machining and before delivery.

**Special Notes:-** The quotation must contain the following details without which it shall be considered incomplete and hence liable to be rejected.

1. Details of manufacturing procedure and facility for manufacturing, inspection, calibration, testing, cleaning and packing facilities.
2. List of clients for similar ultra-high precision jobs executed and their value. Any previous experience in executing similar type of jobs will be the main criteria for selection of the vendors.
3. A break up of the cost providing i.) Basic Cost ii.) Taxes and duties iii.) Packing and the forwarding charges.
4. The purchaser may suggest minor changes in the drawings during fabrications/ Machining of the above items.
5. Any deviations from the above specifications and conditions shall be clearly brought out by the party in the absence of which the offer may be rejected.

**Packing:-** Suitable packing Boxes with inner soft liner is to be used to avoid any scratches, dents etc. coming on components surface during handling and transportation.

**Job Site:-** Party workshop.

**Free issue materials:-** No FIM will be issued to the party.

*Naveen Kumar*

**Charges:-** Contractor shall quote lump sum as well as the **break-up of price** for the execution of the complete job. The price quoted shall remain valid at least for three months' time from the date of offer.

**Completion period:** - The party should complete the entire job within four months after the receipt of the work order. Any delay which is attributed to the contractor is liable for penalty @ 1/2% per week (max.5%) to be imposed on the contractor. However, in case any extension in delivery is to be granted to contractor, party's request for extension may be called for before expiry of work Order. The same may be justified by the Division, whether extension granted is with or without levy of liquidated damages.

**Terms of payments :-** No advance payment shall be made. Full payments shall be made only after completion of the job. 3) Payment shall be made through ECS, by Accounts Officer, BARC. The fabricator shall have to submit in advance duly signed and stamped receipt along with the bills, for the immediate payment.

**a. Confidentiality :-** Party shall not disclose any information to any third party concerning the matters under this contract generally. In particular, any information identified as "Property" 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 consent of the original disclosing party.

This clause shall apply to the sub-contractors, consultants, advisers or the employees engaged by the party with equal force.

**b. "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 vendor, sub-contractor, consultant, adviser or the employees of a vendor will invite penal consequences under the aforesaid legislation.

**Important:-** Party shall have to get the security clearance / Police verification for the manpower / Persons which will be deployed for the execution of the job. Details of GST no. / PAN No. / Registration etc. are to be provided by the party.

