

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

MRG., CFB, Trombay,  
Mumbai. 400085

Ref: - CrTD/BARC/NK/18/OPA/102181

Date: 24/05/2018

**Tender No.:** CrTD/BARC/NK/18/OPA/102181  
**Tender Due Date:** 10:00 hrs, 12 June, 2018

Sub: Invitation of quotation for  
**"Fabrication of 5 kW Turboexpander cold flange assembly and associated parts"**  
as per our technical 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 :- Fabrication of 5 kW Turboexpander cold flange assembly and associated parts 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, **12 June 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-I**  
**TECHNICAL SPECIFICATION FABRICATION**

**FABRICATION OF 5 KW TURBOEXPANDER COLD FLANGE ASSEMBLY AND ASSOCIATED PARTS AS PER SPECIFICATIONS.**

The specifications for the fabrication work of critical cryogenic components are as follows:

The required items are-

Fabrication of 5 kW Turboexpander cold flange assembly and associated parts  
as per specifications and drawings/Figures.

Required drawings/Figures are-

| S. N. | Part Name                        | Drawing No. | Quantity |
|-------|----------------------------------|-------------|----------|
| 1     | Insulation Ring SS               | Figure 1    | 25       |
| 2     | Insulation Ring Teflon           | Figure 2    | 20       |
| 3     | Teflon Connector                 | Figure 3    | 3        |
| 4     | Cold Flange Outer Part           | Figure 4    | 3        |
| 5     | Bottom Labyrinth Bearing         | Figure 5    | 5        |
| 6     | Intermediate Flange 2kW          | Figure 6    | 2        |
| 7     | Sealing Cover of 2kW cold Flange | Figure 7    | 2        |
| 8     | Teflon Insulation Outer          | Figure 8    | 2        |
| 9     | Filter for 2kW in 5kW flange     | Figure 9    | 2        |
| 10    | Retainer plate for lip seal      | Figure 10   | 4        |

**Job Site-** At Party Workshop.

**Technical Notes-** The contractor shall be responsible for any damage of any equipment and / or material at the site due to their unsafe and negligence of work.

**Materials-** Material of components is SS 304L, PTFE and Graphite impregnated with Babbit alloy as mentioned in the drawings/Figures. Party has to submit a **material chemical composition test certificate** by the NABL approved laboratory for all the materials. Sample should be tested in presence of our engineer. Party has to conduct the mechanical Test (Tensile and Hardness) of each raw material rod from which component is to be prepared.

*Naveen Kumar*

**Approvals** –

- (1) Party has to submit the written **detailed fabrication procedure** and take the approval from purchaser before starting the fabrication.
- (2) Party has to submit the written **detailed quality assurance procedure** before starting the fabrication.
- (3) **Pre-dispatch inspection by purchaser** of all the items shall be done after completion and before delivery.

**Free issue materials** – 2 Nos. Graphite block Ø60mmX60mm will be given as FIM.

**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.

*Navleen Kumar*  
23/05/18