

Government of India  
Bhabha Atomic Research Centre  
Laser & Plasma Technology Division  
Trombay, Mumbai-400085

REF: LPTD/works/SG/2017/196173

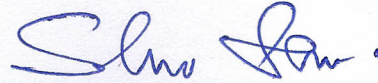
Date: 08/11/2017

Sub : Minor Fabrication - invitation of quotations.

Dear Sirs,

1. Quotations are invited for the fabrication of plasma process chamber for high pressure study with specifications and details as per Annexure-D.
2. Bidder shall quote for fabrication of these components with material.
3. Taxes and excise duties shall be quoted separately. Form AF shall be provided where necessary.
4. The quotations must reach, **Head, Laser & Plasma Technology Division** by **20.11.2016** and must be sent in a sealed envelope **super scribed** with the above reference number and due date given above.
5. The address on the envelope should read :  
The Head,  
Laser & Plasma Technology Division  
Bhabha Atomic Research Centre,  
Trombay, Mumbai - 400 085.  
**(Attn.: S.Ghorui)**
6. The bidder shall have to take an insurance policy against any material issued to him by the purchaser.
7. The fabrication work shall be subject to inspection by our engineer.
8. The bidder shall, complete the work within **60 days** from the date the firm work order is issued to the bidder. Installation will be done at **M-34, PRIP Shed, Near Engg.Hall-8, BARC, Trombay, Mumbai-400 085.**
9. Head, Laser & Plasma Technology Division, BARC, reserves the right to accept/reject any or all quotations without assigning any reason.

Yours faithfully,



Head, Thermal Plasma Technology Section

**घोडुइ एस. / Ghorui S.**

वैज्ञानिक अधिकारी (जी) / SO (G)

अध्यक्ष, थ प्ला प्रौ अ / Head, TPTS

ले एवं प्ला प्रौ प्र / L & PT Division,

भा प अ केन्द्र / Bhabha Atomic Research Centre

मुंबई-400 085. / Mumbai - 400 085.

Encl.: **As above.**

Copy to: Accounts Officer, G.S.S. The quotations will be opened at 3.00 PM. on **20.11.2017**

## Annexure-D

### **1. Justification and Scope of work:**

Thermal Plasma Technology Section of Laser & Plasma Technology Division is involved in design and development of arc plasma torches. The present fabrication work involves fabrication of a Plasma process chamber for high pressure study with specifications and details as detailed below for continuous operation with a high efficiency (>60%) and low power (<10kW) tungsten electrode plasma torch for high pressure application. There is no free issue of material. Scope of the work includes procuring material of appropriate dimension, quantity and quality, fabrication of the components as per the design and specification, assembling of the components to form the final device and delivery of the item to the users place. Welding of the joints as necessary must be performed by certified welders only. Work shall be carried out to Indian Standards and Code of Practices. In absence, latest issue of International Standards shall be followed. Any discrepancies / conflict noticed shall be directed to the Executing Officer for his direction/approval. Required precision, overall dimension of the components and material of construction are provided for proper budgetary estimate. Detail fabrication drawing of each and every component will be provided only after the issue of the final work order.

### **2. Design Specifications**

Drawing and overall dimension of the chamber is given in section3. The chamber is double walled water cooled with guided flow arrangement through the space between the inner wall and the outer jacket. The top flange, for mounting plasma torch, is also water-cooled. Three threaded studs on the top of the flange facilitate mounting of the torch. Water enters from the bottom, passes through the chamber wall, and then passes to the top flange through a SS tube and finally goes out. The top flange also will have guided flow arrangements for efficient cooling. An arrangement of safety release valve is made. Whenever pressure exceeds 10 atm, the valve will open and release the pressure. The view ports will be mounted with toughened furnace glass to withstand high temperature. The whole setup will be mounted on a table as shown.

### 3. Overall design and dimension of the chamber:

