

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

REF: LPTD/works/SB/ 2023/70942.

Date: 29/8/2023

Sub : Minor Fabrication - invitation of quotations.

Dear Sirs,

1. Quotations are invited for operation and maintenance of plasma incinerator plant and associated auxiliary system near PRIPShed, BARC, Trombay as per technical specifications presented in 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 **17.04.2023** 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. Bhandari)**
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 operation and maintenance work within **365 days** from the date the firm work order is issued to the bidder. Operation 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

Encl.: As above.

Copy to:

1. Accounts Officer, G.S.S.
2. Head, LISD, for uploading

**घोडुई एस. / Ghorui S.**

वैज्ञानिक अधिकारी (एच) / SO (H)

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.

## Annexure-D

### Technical Specifications of operation and maintenance of plasma incinerator plant and associated auxiliary system near PRIPShed, BARC, Trombay as per technical specifications presented in Annexure-D

#### 1. Justification:

Thermal Plasma Technologies Section of Laser & Plasma Technology Division is involved in design and development of Air Plasma Incinerator for biological, municipal, hospital and radioactive waste treatment. The present job involves operation and maintenance of Plasma Incinerator Facility PRIPShed, BARC, Trombay. It is responsibility of the vendor to completely understand the scope and type of work before sending their quotations.

#### 2. Scope of Work:

Sl. No.	Items/Job	Description
1.	Operation and maintenance of Plasma Incinerator Facility, PRIPShed, BARC, Trombay for <b>24 numbers runs. Each run involves total 5 days. The breakup of each run is as follows: 2 days for packaging of feed waste boxes, pre-operational preparation and maintenance of plant, one day for plant operation (8 hr run) and 2 days for post operational plant maintenance.</b>	<p>Operation and maintenance of the plasma incinerator facility includes</p> <p>Cleaning &amp; Ash removal from primary chamber and secondary chamber. Coke Refilling inside the primary chamber. Maintenance, replacement and cleaning of view port of primary chamber and secondary chamber.</p> <p>Cleaning of NaOH tank &amp; refilling of NaOH for operation of scrubber system. Cleaning of water tank &amp; refilling of water for operation of packed bed column. Maintenance of NaOH &amp; water pumps which includes cleanup of bearing, visual inspection of mechanical seal, vibration and noise check in operation of pumps. Maintenance and replacement of SS Ball valves, Y-Type Strainer, NRV valves &amp; fittings. GTAW &amp; SMAW welding, cutting, grinding, buffing and minor modification of piping system with repair maintenance and cleanup of system.</p> <p>Maintenance and cleaning of dust arrested on bottom part of chimney and cleanup of gas detector and draining of condensed water accumulated during operation.</p> <p>Preventive maintenance of blower involving checking of motor, gearbox, blower impeller, static &amp; dynamic balancing of blower impeller &amp; draining of condensed water accumulated during operation.</p> <p>Maintenance and cleaning of Spray Nozzle of venturi scrubber &amp; packed bed column.</p>

	<p>Maintenance, replacement and cleaning of Ceramic Pall ring (packing materials) placed inside packed bed column.</p> <p>Maintenance, replacement and cleaning of Demister pad of SS 316 Filter media made up of SS 316L dually knitted, single segment, mesh pad type &amp; round shape.</p> <p>Maintenance and replacement of High temperature thermal gasket for primary combustion chamber &amp; secondary combustion chamber.</p> <p>Maintenance and replacement of Teflon/champion / silicon gasket in venturi scrubber, packed bed column, NaOH tank , water tank &amp; associated pipeline . (The work does not involve supply of gasket). The scope of AMC is for doing /carrying out replacement activity only.</p> <p>Maintenance and replacement of PU pipe &amp; PU push fittings for plasma torch assembly.</p> <p>Maintenance, replacement and general fitment of components related to air plasma torch. Alignment and fitting of air plasma torch with cooling jacket. Placing 3 nos. of air plasma torch inside the primary chamber. Removing of Air plasma torch online and replacing with another one while running of the gasifier plant.</p> <p>Maintenance, replacement and general fitment of tungsten-based spark igniter &amp; 10 KW plasma torch of secondary chamber.</p> <p>Cleanup and maintenance of main pusher &amp; sliding gate of primary chamber and alignment check of main pusher &amp; sliding gate connected with pneumatic cylinder.</p> <p>Maintenance and operation of inlet header &amp; outlet header of air plasma torch consisting of Rota meters, flow switches, thermocouples (RTD), valves &amp; pressure gauge. Removing of damaged and non-functioning instruments during operation and shutdown.</p> <p>Maintenance and replacement of K-type thermocouple for primary chamber and secondary chamber.</p> <p>Operation and maintenance of dioxin and furan sampling unit. Replacement of the components of dioxin furan sampling unit if it does not function.</p> <p>Operation and maintenance of air plasma torches. Replacement of the components of air plasma torch if it does not function.</p> <p>Preparation of waste boxes to fed inside the primary chamber consist of cotton, wood pellets, plastic and scrap papers only.</p> <p>Safe operation, control and supervision of plasma</p>
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		incineration plant which involves operation of primary combustion chamber, Secondary combustion chamber, venturi and packed bed scrubbers, feeder system, coke feeding, scrubbing system and operation of ID fan/blower unit & housekeeping of plant. Supervisor : 1 No. Skilled Labour : 2 Nos. ( Fitter , Welder) Unskilled Labour : 3 Nos
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### 3. Vendor qualification criteria

Air plasma incinerator deploys high end thermal plasma technology for incineration/gasification of hazardous solid wastes in an environment friendly manner. It is important that for operation and maintenance of the plasma incinerator, the vendor must have previous experience of working with air plasma torch, air plasma torch-based incinerator for solid waste management and maintenance of its post processing equipments. Towards work experience, vendor must submit proof of working with air plasma equipments and air plasma torch-based incinerator along with submitted quotation.