Ref- IF3/2019/01/170953

Tender No.: BARC / IF3 / 01 / 2019 / 170953
Due Date: 20/09/2019

Sub: Fabrication, supply and installation of Process Cooling Water Chiller System for calcination furnace at IF3.

Sealed quotations are invited for and on behalf of the President of India for “Fabrication, supply and installation of Process Cooling Water Chiller System for calcination furnace at IF3”.

The following should be superscribed on the top of envelope containing quotation:

- Tender due date
- Tender No.
- Party’s Name & address and “Kind Attention to: D K Verma, Technical Officer, IF3 / BARC

Sealed offers should reach at the following address by SPEED POST (INDIA POST) on or before
DUE DATE: September 20, 2019, TIME: 16:00 Hrs

Address: To,
Head, IF3
South Site, BARC
Trombay, Mumbai-085
Contact no.: 022 2559 4473

PPL/IF3 1/5
PART A

1. GENERAL SCOPE OF THE WORK

Scope of work:
Fabrication, supply and installation of process cooling water chiller system.
Capacity: 2TR@10\(^{\circ}\)C
Quantity: 01 No.

2. PROCESS COOLING WATER CHILLER SYSTEM

QUANTITY: 01 NO.

TECHNICAL SPECIFICATIONS

- **Cooling capacity**: 2TR @10\(^{\circ}\)C.
- **Evaporator tank capacity**: 600 mm (L) x 600 mm (W) x 500 mm (Depth)
- **Maximum overall dimensions of the unit**: 1000 mm (L) x 700 mm (W) x 1350 mm (H)
- **Power supply**: 230 V, single Phase, 50 Hz AC
- **Outer Body**: The outer body should be fabricated in SS304L framework with sheet metal canopy. It should be suitable insulated to avoid loss of cooling. The complete chiller system along with the evaporator tank should be integrated into one standalone unit with control console mounted on it.
- **Evaporator Tank**: The tank should be made in SS304L (20 SWG) and should be suitably insulated. Suitable heat exchanger should be designed to cool the liquid in the evaporator tank up to 10\(^{\circ}\)C temperature. The evaporator tank should be insulated with PUF. A hinged top cover should be provided with proper insulation.
- **Compressor**: Hermetically sealed type refrigeration compressor with built-in suitable electrical motor, cooled by refrigerant gas, having internal OLP to run on single/three phase 50Hz AC power supply, of suitable capacity should be provided. The compressor should be of reputed make e.g. Emerson Copland / Danfoss Maneurope / Tecumseh.
- **Condenser**: Forced draft air cooled condenser of suitable capacity, made with 27 SWG Copper tubing mechanically bonded with aluminium fins, is to be provided. A suitable fan (low noise & low power consumption) with protective grill & air filter at suction side is to be provided for air circulation.
- **Refrigerant piping**: The refrigerant piping should be done with copper tubes with suitable fittings.
- **Refrigerant Gas**: One full charge of suitable and Govt. approved environment friendly refrigerant gas should be provided.
• **Pump for chilled water recirculation:** Mono block type pump in SS304 of capacity 10-20 lpm at 1.5 kg/cm² pressure is to be provided. The interconnecting piping should be done with SS304L with SS304L ball valve.

• **Nozzles:** The following flanged nozzles should be provided in the evaporator tank.
  
  a. Chilled water Inlet/Outlet: 25 NB
  b. Chilled water Inlet/Outlet: 25 NB
  c. Make up water: 15NB
  d. Drain: 15 NB

• Control Console: The control console consisting of temperature controller sum indicator, ON/OFF switches and ON/OFF indicators, should be microprocessor based menu driven, programmable, electronic temperature controller having digital bright LED display with ±1°C resolution

3. **GUARANTEE:** Guarantee for material and workmanship for at least one year.

4. **FABRICATION DRAWING:** Prefabrication drawings **MUST** be submitted and take approval from BARC before fabrication starts.

5. **QUALITY ASSURANCE PLAN FOR FABRICATION.**

5.1. **Procurement of raw materials:**
The raw material SS304L required for the above work should be purchased from reputed and approved dealers only. The materials shall be offered for material inspection and identification. After receipt and stamping the materials only, it will be sent for testing at govt. approved testing labs. The sample will be drawn, identified, sealed in front of BARC’s authorized representative. After testing and final approval only this material will be used for further fabrication. Raw material and weld material shall meet the requirements of ASME Sec. II or ASTM standards.

5.2. **Welding procedures and qualifications tests**

Welding procedure for SS304L welds should be GTAW (TIG Welding) process for all passes. All joints should be full penetration welds. The root passes for weld joints, accessible from only outside should be continuously back purged with argon during welding. The argon gas used should be of 99.95% purity. Compatible filler wires for the TIG welding should be used.

Surface to be welded should be made free from paint, oil, grease, dust or any other contamination. Cleaning of surfaces / weld edge preparations / completed weldments should be done by use of approved solvents.

Tack welds should be examined for cracks before continuing with further welding and any defects observed should be done by qualified and approved welders.

**QA procedures for Weld joints:**

i) Visual inspection

ii) D.P. test of all welded joints
6. GENERAL CONDITIONS

- Vendor(s) should have sufficient expertise in carrying out fabrication of water Chiller system.
- The job is "important and urgent" in nature, hence vendor is expected to have a clear understanding of the job so that execution can be fast
- GSTIN & PAN should be clearly mentioned in the quotation, without which the offers will not be considered.

Purchaser's Scope:  Free water and electricity will be available at site.

PART B

TERMS AND CONDITIONS:

Confidentiality Clause:

1. Confidentiality: No party shall disclose any information to any third party concerning the matters under this contract generally. In particular, any information identified as "Proprietary" in nature by the disclosing party shall be kept strictly confidential by the receiving party and shall not be disclosed to any other third party without the prior consent of the original disclosing party.

2. "Restricted information" categories under section 18 of the Atomic Energy Act, 1962 and "Official Secrets" under section 5 of the Official Secrets Act 1923:

3. Any contravention of the above mentioned provisions by any contractor, sub-contractor, consultant, advisor or the employees of a contractor will invite penal consequences under the aforesaid legislation.

4. Prohibition against use of BARC's name without permission for publicity Purposes:- The contractor, sub-contractor, consultant, advisor or the employees engaged by the contractor shall not use BARC's name for any publicity purpose through any media like press, radio, TV or internet without prior written approval of BARC.

SAFETY: Contractor shall take all the safety precautions while working in the department and shall be solely responsible for any incident happening to his employees during the course of work in the department.

PRICE: Offered cost shall be valid for the entire scope of work (materials, fabrication, supply, Installation, taxes, packing & forwarding, transportation etc). Maximum possible break-up price should be given in the offer.

VALIDITY: Offer should be firm and valid for next three months.

TAX: As applicable shall be indicated clearly and separately.

COMPLETION PERIOD: 08 weeks from the date of the releasing the work order. The work completion schedule should be strictly adhered with. Any delay which is attributable to the contractor is liable for penalty @ 0.5% per week (max 5 %) on total work order value. In case extension in work completion period is required, request for it with proper and valid justification is to be sent to us positively before the expiry of work completion period.

INCOME TAX: Income Tax @2% and 2% GST TDS shall be deducted from vendor's bill.
PAYMENT: 100% payment including taxes will be made after delivery of material and successful completion of work and submission of following documents:
   a. Original bill
   b. Advance stamped receipt
   c. Guarantee Certificate
   d. After receipt of site clearance certificate by the contractor issued from the BSMO (BARC Swatch Monitoring Officer).
   e. Contractor shall fill up the option for payment through ECS/RTGS with pre-stamped receipt at the time of payment.

GSTIN INVOICE: Invoice raised by a registered supplier of taxable goods/services along with other details specifically indicates:
   a) GSTIN
   b) PAN
   c) Location of supply
   d) Tax component to be separately indicated in the invoice.
   e) An undertaking shall be submitted that the GST has been promptly deposited with the authorities.

(D K Verma)
Technical Officer-D, IF3

(Santanu Das)
Superintendent, PPL, IF3