NATIONAL CENTER FOR COMBUSTION RESEARCH AND DEVELOPMENT (NCCRD)
INDIAN INSTITUTE OF TECHNOLOGY MADRAS
CHENNAI – 600036, INDIA

Ref. No. ICS/11-12/013/DSTX/TSUN **Date: 13 Aug. 2014**

Due date: 3 Sep. 2014

Item name: Vertical Multistage Centrifugal Pumps System

1. Quotations are invited in duplicate for the items shown overleaf (in Annexure I). The quotations duly sealed and superscribed on the envelope with reference no. and due date, should be addressed to the undersigned so as to reach on or before the due date mentioned above.
2. The quotations should be valid for sixty days from the due date and the period of delivery required should also be clearly indicated.
3. The total cost of the equipment in terms of CIP Chennai should be clearly mentioned.
4. Terms of warranty and guarantee should be explicitly mentioned.
5. Packing and delivery charges, customs and clearance duty should be clearly stated.
6. Goods shall not be supplied without an official supply order.
7. Local firms : Quotations should be for free delivery to this institute. If quotations for ex-godown delivery charges should be indicated separately.
8. Firms outside Chennai: Quotations should be for F.O.R. Chennai. If F.O.R. consignor station, freight charges by passenger train / lorry transport must be indicated. If ex-godown, packing, forwarding and freight charges must be indicated.
9. The rate of sales / general taxes and the percentage of such other taxes legally leviable and intended to be claimed should be distinctly shown along with the price quoted. Where this is not done, no claim for sales / general taxes will be admitted at any stage and on any ground whatsoever. The taxes leviable should take into consideration that we are entitled to have Concessional Sales Tax (CST) applicable to non-government educational institutions run with no profit motive for which a concession sales tax certificate will be issued at the time of final settlement of the bill.
10. Payment : Specify the mode of payment and if advanced payment has to be made. Every attempt will be made to make payment within 30 days from the date of receipt of bill / acceptance of goods, whichever is later.
11. IIT Madras is exempt from payment of excise duty and is eligible for concessional rate of customs duty. Necessary certificate will be issued on demand.
12. IIT Madras has the right to accept the whole or any part of the tender or portion of the quantity offered or reject it in full without assigning any reason.
13. In case of any queries/clarifications, please contact Mr. Chetankumar, NCCRD, IIT Madras, Chennai, Ph. +91-9445968284, E-mail: vegad.cst@gmail.com.
14. The sealed quotation may be sent to

    Prof. S. R. Chakravarthy
    NCCRD Office
    No. 201, Rarefied Gas Dynamics Lab (Behind Aerospace Engineering Dept.)
    Chennai – 600036
    (P) +91-44-22575025

NATIONAL CENTER FOR COMBUSTION RESEARCH AND DEVELOPMENT (NCCRD)
INDIAN INSTITUTE OF TECHNOLOGY MADRAS
CHENNAI – 600036, INDIA

Annexure I

Ref. No. ICS/11-12/013/DSTX/TSUN **Date: 13 Aug. 2014**
Due date: 3 Sep. 2014

Specifications of

Vertical Multistage Centrifugal Pumps System

Quantityof the system requirement is one.

System Includes: Parallel Pumps (3 Nos.),VFD (Variable Frequency Drive) for each pump and Control Unit common for system

1. Applications:

- Handling of fluid at different pressure
- Variable speed applications
- High flow rate applications for fire sprinkler

2. Fluid to be Handled:

- The fluid to be handled is water (Fire Fighting Water), where there should not be any chemical and mechanical corrosive action on pump material.

3. Operating Conditions:

- System Discharge capacity of water shall be up to 30 m^3/h
- System Discharge pressure head shall be up to 70 m (water column)
- Temperature of fluid to be handled is up to 60^0C
- Ambient temperature is up to 40^0C
- Supply voltage: 3-phase, 3× 230 V, 50 Hz

4. System Materials:

- The complete hydraulic system (impeller/diffuser) in Stainless Steel
- Suction and discharge casing in Cast Iron
- Common suction and discharge pipes are in stainless steel

5. System Arrangements:

- All three vertical multistage pumps should be in parallel arrangement and are fixed to the base plate on anti-vibration mountings
- The system should be provided with isolation valve (2nos.) per pump, Non Return Valve (NRV, 1 no.) per pump, pressure transmitter (1 no.) and pressure gauge (1no.)
- Common Stainless Steel Suction Manifold, Common Stainless Steel discharge Manifold with pipe diameter of 65 mm (I.D.).

5. Control Unit:

- Control Panel with VFD (Variable Frequency Drive) per pump
- Service interface for connection to a PC
- Transformer for control voltage
- Motor protection switch per pump
- Master switch, lockable
- Terminals with identification for all connections
- Circuit diagram and parts list for electrical parts
- Terminal for connecting digital dry running protection switch
- The information displayed; system pressure, number of pumps, inlet pressure, operating hours

Warranty:

12 months from the date of installation or 18 months from the date of invoice.

NATIONAL CENTER FOR COMBUSTION RESEARCH AND DEVELOPMENT (NCCRD)
INDIAN INSTITUTE OF TECHNOLOGY MADRAS
CHENNAI – 600036, INDIA

SYSTEM SCHEMATIC DIAGRAM