ANNEXURE-I : TECHNICAL DATA SHEET

A – SITE CONDITION

Barometric Pressure …… 736 mmHg.

Design Ambient temperature : 45°C

Design temperature for electrical equipment : 50°C

Power supply: As per attached Annexure III.

B – TECHNICAL PARMETERS OF FAN

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 1) |  | No. of fan required | 1 x 100% MCR | | | | | |
| 2) |  | Medium handled | Flue Gas – Analysis ( % by Volume, wet) : CO2 – 10.8 ; O2 – 6.62 ; N2-72.73 ; Moisture – 9.84 . | | | | | |
|  |  |  | Flue Gas with dust concentration of 120 mg/Nm3 and SOx level- 1246 mn/Nm3 | | | | | |
|  |  |  |  | | | | | |
| 3) |  | Type | Centrifugal, Double Suction – Single Outlet**,** Simply supported, Backward bladed impeller, Motor driven. | | | | | |
|  |  |  | Fan inlet / outlet orientation shall be as per tender layout as per Annexure. | | | | | |
| 4) |  | Control of Fan | **Main Offer - RVC or MLD (**Pneumatic Actuated**).** | | | | | |
|  |  |  | **Alternate Offer - VFD as primary & RVC or MLD (**Pneumatic Actuated**) as secondary.** | | | | | |
| 5) |  | Location | Outdoor | | | | | |
| 6) |  | Max. Speed | 990 RPM (Vendor to confirm) | | | | | |
| 7) |  | Parameters (for fan) |  | | | | | |
|  |  | **Cases** |  | **100% BMCR(Present)** | **Fan Design (Present)** | **100% BMCR(Future)** | **Fan Design (Future)** |  |
|  | a. | Fan Selection Criteria |  | Fan shall be selected as per the present case indicated with the condition that by changing the impeller, motor or even casing, the fan can be upgraded for the future upgradation requirement as indicated. The load data for civil foundation design shall be provided considering the final upgraded fan load details. | | | |  |
|  | b. | Volume flow | m³/hr | 5,86,669.00 | 6,45,350.00 | 5,86,669.00 | 6,45,350.00 |  |
|  |  |  |  | Above flow figures are at (-) 25 mmwc and 148 deg C | | | |  |
|  | c. | Temperature | °C | 148.00 | 148.00 | 148.00 | 148.00 |  |
|  | d. | Static Pressure at Duct tapping point | mm WC | (-)25 | (-)25 | (-)25 | (-)25 |  |
| Static Pressure at Fan I/L | mm WC | (-)60 | (-)67 | (-)60 | (-)67 |  |
| Static Pressure at Fan O/L | mm WC | (+)206 | (+)249 | (+)238 | (+)289 |  |
|  | e | Fan Differential | mmWC | 266 | 316 | 298 | 356 |  |
|  | f | Site Barometric Pr | mmHg | 736 | 736 | 736 | 736 |  |
|  | g | Fan shaft power with MLD/RVC | kW | Vendor to Specify | Vendor to Specify | Vendor  to Specify | Vendor  to Specify |  |
|  | h | Fan shaft power with  VFD | kW | Vendor to Specify | Vendor to Specify | Vendor  to Specify | Vendor  to Specify |  |
|  | i | Guaranteed Absorbed Power with MLD/RVC  (no +ve tolerance) at motor inlet terminals. | kW | Vendor to  Specify | Vendor to Specify | Vendor to  Specify | Vendor to  Specify |  |
|  | j | Guaranteed Absorbed Power with VFD  (no +ve tolerance) at motor inlet terminals. | kW | Vendor to  Specify | Vendor to Specify | Vendor to  Specify | Vendor to  Specify |  |
|  | k | Motor input terminal power | kW | Vendor to  Specify | Vendor to Specify | Vendor to  Specify | Vendor to  Specify |  |
|  | l | Fan Efficiency | % | Vendor to  Specify | Vendor to Specify | Vendor to  Specify | Vendor to  Specify |  |
|  | m | Motor Rating - Selected | kW | Vendor  to Specify | Vendor to Specify | Vendor  to Specify | Vendor  to Specify |  |
| 8) |  | Details of Lub Oil System |  | Vendor to specify | | | |  |
|  | a. | No. of Pumps & details of Pumps |  | Vendor to specify | | | |  |
|  | b | Tank details |  | Vendor to specify | | | |  |
|  | c | Coolers’ detail |  | Vendor to specify | | | |  |
|  | d | Water temp , Deg C ,at inlet and outlet and Water flow m3/hr ,required |  | Vendor to specify | | | |  |
|  | e | Lubricant trade name and grade |  | Vendor to specify | | | |  |
| 9) |  | Instrument air quantity required, Nm3/hr at 6.0 bar g |  | Vendor to specify | | | |  |

PLEASE NOTE : THE VOLUME FLOWS & DIFFERENTIAL HEAD ARE WITHOUT ANY NEGATIVE TOLERANCE. SIMILARLY ABSORBED POWER FIGURE TO BE QUOTED ARE WITHOUT ANY POSITIVE TOLERANCE.

C - MATERIAL OF CONSTRUCTION: **R-1**

|  |  |
| --- | --- |
| **Part Description** | **Booster Fan** |
| Inlet Cone | Bidder to indicate considering the high availability and durability of the material against operation of the Flue gas quality given in the spec. |
| Casing | Bidder to indicate considering the high availability and durability of the material against operation of the Flue gas quality given in the spec. |
| Impeller | Bidder to indicate considering the high availability and durability of the material against operation of the Flue gas quality given in the spec. |
| Liner | Bidder to indicate considering the high availability and durability of the material against operation of the Flue gas quality given in the spec. |
| Shaft | Bidder to indicate considering the high availability and durability of the material against operation of the Flue gas quality given in the spec. |
| Bearing | Bidder to indicate considering the high availability and durability of the material against operation of the Flue gas quality given in the spec. |
| Dampers | Bidder to indicate considering the high availability and durability of the material against operation of the Flue gas quality given in the spec. |
| Bearing Housing | Bidder to indicate considering the high availability and durability of the material against operation of the Flue gas quality given in the spec. |
| Seals | Bidder to indicate considering the high availability and durability of the material against operation of the Flue gas quality given in the spec. |

D- PAINTING SPECIFICATION

Detailed procedure for painting to be specified item wise by Bidder.

E- VENDOR TO SPECIFY THE FOLLOWING ALONG WITH THE FAN DATA SHEET:

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **SL. NO.** | **Description** | **BMCR Present** | **Fan Design Present** | **Fan Design future** | |
|  | Items indicated as “ Vendor to specify” elsewhere in this spec and datasheet shall also be indicated along with offer | | | | |
| 1 | Application |  |  |  | |
| 2 | Size and Type |  | | | |
| 3 | Volume – m³/sec |  |  |  | |
| 4 | Diff Static head – mm WC |  |  |  | |
| 5 | Temperature °C |  |  |  | |
| 6 | Head – Discharge curve with varying damper opening & efficiency. |  |  |  | |
| 7. | Head – Discharge curve with varying RPM & efficiency. |  |  |  | |
| 8. | RPM |  |  |  | |
| 9 | Absorbed power kW (for MCR and Test Block conditions for both MLD/RVC case & VFD case. |  |  |  | |
| 10 | Drive motor detail |  |  |  | |
| 11 | Total weight of the fan assembly (approx) |  |  |  | |
| 12 | GD2 value |  |  |  | |
| 13 | Noise level at fan |  |  |  | |
| 14 | Inspection openings,  -Drain connections,  -Casing split,  -Coupling guard,  -Suction opening guard,  -Shaft seal,  -Lifting lugs,  -Provision for monitoring DE & NDE bearing temperatures, |  |  | |  |
| 15 | Type of Coupling, Bearing |  |  | |  |
| 16 | Dynamic balancing of Rotor  assembly |  |  | |  |
| 17 | Other salient features |  |  | |  |
| 18 | Other system requirement, if any. |  |  | |  |
| 19 | Surface treatment, Surface  finish, Packing |  |  | |  |

F- LIST OF PREFERRED MAKES

|  |  |
| --- | --- |
| **ITEM** | **MAKE** |
| Bearings | SKF |
| RTD | Pyroelectric / Waaree |
| Pneumatic Actuator. | Kelton. |
| MOTOR | BHEL/ ABB/ Siemens |
| VFD | ABB/ Siemens/ Amteck |
|  |  |