

## ASSEMBLED GAS TRAIN (Max Flow 150 SCM/Hour)

|      |                                                                                                                                                                                                                                                                                                                                                                         |  |
|------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|
| 3.06 | Gas Regulator                                                                                                                                                                                                                                                                                                                                                           |  |
| 3.07 | Safety relief valve with isolating ball valve                                                                                                                                                                                                                                                                                                                           |  |
| 3.08 | Outlet pressure gauge with isolating cock.                                                                                                                                                                                                                                                                                                                              |  |
| 3.09 | Low pressure switch (for tightness and final pressure control.)                                                                                                                                                                                                                                                                                                         |  |
| 3.10 | High Pressure switch (for tightness and final pressure control.)                                                                                                                                                                                                                                                                                                        |  |
| 3.11 | Solenoid valves (for electrical operation and valve proving(tightness controll))                                                                                                                                                                                                                                                                                        |  |
| 3.12 | Tightness Control System                                                                                                                                                                                                                                                                                                                                                |  |
| 3.13 | Control panel fitted with the Valve Proving System with On/Off switch for the same and Push Button for opening the main Gas Solenoid Valve.                                                                                                                                                                                                                             |  |
|      |                                                                                                                                                                                                                                                                                                                                                                         |  |
|      | <b>Flow Measurement Component</b>                                                                                                                                                                                                                                                                                                                                       |  |
| 3.14 | D.P Meter                                                                                                                                                                                                                                                                                                                                                               |  |
| 3.15 | Flow Totaliser mounted on GAS valve train control panel                                                                                                                                                                                                                                                                                                                 |  |
|      | <b>General Requirements :</b>                                                                                                                                                                                                                                                                                                                                           |  |
|      | <b>4 Documentation and manuals</b>                                                                                                                                                                                                                                                                                                                                      |  |
| 4.1  | Three sets of documents (In soft and hard copy both) for detailed operation, maintenance and servicing manuals of equipment and other accessories to be provided in English language only.                                                                                                                                                                              |  |
| 4.2  | Test Certificate, Guarantee Certificate, Calibration certificate for flow meter components (orifice plate, D.P Transmitter and totaliser) and gas train components must be provided along with instrument.                                                                                                                                                              |  |
|      | <b>5 Job proving/Commissioning of the Gas Train</b>                                                                                                                                                                                                                                                                                                                     |  |
| 5.1  | Installation and commissioning of the gas train shall be under the scope of supplier. Training for handling and operation of the equipment should be provided to the user free of cost.                                                                                                                                                                                 |  |
|      | <b>6 Acceptance Norms</b>                                                                                                                                                                                                                                                                                                                                               |  |
| 6.1  | Equipment shall be accepted only after one week of trouble/breakdown free operation of gas train after commissioning at CFFP BHEL haridwar.                                                                                                                                                                                                                             |  |
|      | <b>7 Warranty :</b>                                                                                                                                                                                                                                                                                                                                                     |  |
| 8.1  | The supplier shall provide full warranty for at least two year from the date of job proving. If instrument remains out of order or starts malfunctioning the supplier shall be intimated of the same and the problem should be rectified within two weeks of getting intimated otherwise, the warranty period will be extended for the corresponding breakdown period . |  |

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| General Instructions |                                                                                                                                                                                                                                                                                | Vendors Remark |
|----------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------|
| 1                    | The "VENDOR TO CONFIRM/SPECIFY" column of this format shall be filled in by the Vendor and submitted along with the offer. Inadequate / incomplete or ambiguous, information against any of the clauses of the specifications/requirements shall be treated as non-compliance. |                |
| 2                    | The offer and all documents enclosed with offer should be in English language only.                                                                                                                                                                                            |                |
| 3                    | Any deviation may please be clearly mentioned                                                                                                                                                                                                                                  |                |
| 4                    | Vendor has to submit technical data sheets/documents/catalogues of the complete assembly as well as individual components offered.                                                                                                                                             |                |
| Sl. No.              | CFFP/BHEL, HARIDWAR REQUIREMENT                                                                                                                                                                                                                                                |                |
| 1                    | <b>Scope:</b> The scope covers the supply & job proving of one no. "Assembled gas train including control panel and flow monitoring provisions" as per following specification.                                                                                                |                |
| 2                    | <b>Objective:</b> For facilitating controlled gas flow (For Natural Gas ) with following parameters and provisions.                                                                                                                                                            |                |
| 2.1                  | Suitable for natural gas.                                                                                                                                                                                                                                                      |                |
| 2.2                  | Operating input pressure – 4 kg                                                                                                                                                                                                                                                |                |
| 2.3                  | Operating output pressure range: 80mbar to 150 mbar                                                                                                                                                                                                                            |                |
| 2.4                  | Maximum flow capacity with above mentioned parameters shall be 150 SCM                                                                                                                                                                                                         |                |
| 2.5                  | Integral valve proving system to ensure leak proof and safe operation.                                                                                                                                                                                                         |                |
| 2.6                  | Integral drip leg to drain out moisture.                                                                                                                                                                                                                                       |                |
| 2.7                  | Integral control panel for operation and control of gas train                                                                                                                                                                                                                  |                |
| 2.8                  | Integral Flow meter and flow totalizer to measure real time gas flow and record cumulative gas flow readings.                                                                                                                                                                  |                |
| 2.9                  | Integral Safety shut of valve                                                                                                                                                                                                                                                  |                |
| 3                    | <b>Essential Accessories/ provisions :-</b>                                                                                                                                                                                                                                    |                |
| 3.01                 | Incoming isolating ball valve.                                                                                                                                                                                                                                                 |                |
| 3.02                 | Isolating ball valve for drip leg                                                                                                                                                                                                                                              |                |
| 3.03                 | Gas Filter                                                                                                                                                                                                                                                                     |                |
| 3.04                 | Inlet pressure gauge with isolating cock.                                                                                                                                                                                                                                      |                |
| 3.05                 | Safety shut off valve.                                                                                                                                                                                                                                                         |                |

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