RAJKOT MUNICIPAL CORPORATION

e-TenderNo.: RMC/AMRUT/2018/WW/50MLD WTP/RAIYADHAR



Tender Documents For Engineering, Procurement, Construction, Commissioning and 5 Years Operation & Maintenance of 50mld Capacity Water Treatment Plant at Raiyadhar, Rajkot

VOLUME-III FORMS OF PROPOSAL & SCHEDULES

| :: Milestone dates of e-Tendering :: | | | | | |
|--------------------------------------|---|--|--|--|--|
| 1. | Downloading of e-Tender documents | 13-10-2018 to 30-11-2018 up to 17.00 Hrs. | | | |
| 2. | Pre-bid Meeting (Queries also to be submitted by e-mail at mail ID vcrajyaguru@rmc.gov.in by 02-11-2018 up to 18:00 Hrs.) | 13-11-2018 at 12.00 Hrs. at central Zone Office-RMC | | | |
| 3. | Online submission of e-Tender | 30-11-2018 up to 18.00 Hrs. | | | |
| 4. | Physical submission of EMD, Tender fee, Documents required for pre-qualification and other necessary documents. | 03-12-2018 up to 18.00 Hrs | | | |
| 5. | Verification of submitted documents (EMD, Tender fee, Documents required for pre- qualification and other Necessary documents.) | 05-12-2018 at 10.30 Hrs. onwards | | | |
| 6. | Opening of online Primary Bid (Technical Bid) | 05-12-2018 at 10.30 Hrs. onwards | | | |
| 7. | Opening of online Commercial Bid (Price Bid) for technically qualified bidders only. | 27-12-2018 at 10.30 Hrs. onwards (If possible) | | | |
| 8. | Bid Validity | 180 Days | | | |

Multi Media Consultants Pvt. Ltd. "Multi House", Lane next to C. N. Vidhyalaya, B/H. Reliance Petrol Pump, Ambawadi, Ahmedabad – 380 006 Phone – (079) – 26423671, 26420567 Fax – (079) – 26466116 e-mail – mmcepl@vsnl.net The Executive Engineer Water Works (Projects) Rajkot Municipal Corporation, Central Zone Dr. Ambedakar Bhavan, Dhebarbhai Road Rajkot-360 001 Tel.: +91 97 145 03709 E-mail: vcrajyaguru@rmc.gov.in

OCTOBER - 2018

INDEX

| Sr. No. | Particulars |
|------------|---|
| 1.0 | Form of Technical Proposal |
| 2.0 | Appendix to Technical Proposal |
| 3.0 | Schedule-I to V |
| 4.0 | Technical Data Sheet – Process & Mechanical Equipment |
| 5.0 | Pipe Schedule |
| 6.0 | Technical Data Sheet – Electrical |
| 7.0 | Guarantee Statement |

FORMS OF PROPOSALS AND APPENDICES

Forms of Technical Proposal

Name of Contract: Contract No:

To: **The Municipal Commissioner, Rajkot Municipal Corporation,** Central Zone, Dr. Ambedakar Bhavan, Dhebarbhai Road, Rajkot-360 001

Sir,

We have examined the Conditions of Contract, Employer's Requirements, Schedules, Addenda Nos ______ and the matters set out in the Appendix hereto. We have understood and checked these documents and have not found any errors in them. We accordingly offer to design, execute, commission and to compressively maintain for five years the said Works and remedy any defects, fit for purpose in conformity with these documents and the enclosed Proposal.

We further undertake, if invited to do so by you, and at our own cost, to attend a clarification meeting at a place of your choice, for the purpose of reviewing our Technical Proposal and duly noting all amendments and additions thereto, and noting omissions therefrom that you may require, and to submit a supplementary price proposal if the amendments, additions and omissions that you require would alter our price proposal as submitted with our bid.

We are, Yours faithfully

| Signature | in the capacity of |
|--------------------------------|--------------------|
| duly authorized to | |
| sign bids for and on behalf of | |

Name Designation

Address

Phone :

Fax : Email :

3

Appendix to Technical Proposal Conditions of Contract

7 Days

plant

Award of Contract

certificate for completion

English / Gujarati

Employer's name and address

Municipal Commissioner Rajkot Municipal Corporation (RMC), Central Zonal Office, Dr. Ambedakar Bhavan, Rajkot-360 001 Gujarat (INDIA)

To be nominated by Employer at the time of

18 months including monsoon period and 3 months successful trial run and acceptance of

60 months after commissioning and issue of

Five years from the date of issue of certificate

for completion / taking over certificate

Contractor's name and address

Phone No. : Fax No. : E-mail :

Time for notice to commence

Name and address of the Employer's Representative/Engineer

Time for Completion of construction of Works

Defects liability period

Period for O & M Contract

Language for communications

Electronic transmission systems

Confidential Details

Indian Rupees

Amount of insurance for work

Currency of all payments

Amount of third party insurance

Total cost of work

As per law per occurrence, number of occurrences: Upto defect liability period

4

| Periods for submission of insurance | Up to contract period till completion of O&M |
|--|--|
| Evidence of insurance | 30 days from commencement date |
| Relevant policies | 60 days -do- |
| Number of members of Arbitral Tribunal | |
| Members of Dispute Adjudication Board (if not agreed) to be nominated by | As per the Arbitration and Conciliation Act 1996, India. |
| Arbitration rules | |
| Language of arbitration | English / Gujarati |
| Place of arbitration | Rajkot |
| Procedural Law | Indian as governed by the Arbitration and Conciliation Act, 1996, India. |
| Limit of Retention Money | 10 % of the construction contract price. (5 % S.D. + 5 % to be recovered from bill) |
| Payments in Local Currencies | In Indian Rupees |
| Time for access to the Site | Within 15 days from the date of Letter of Work Order Acceptance / Letter of Intent |
| Amount of performance security | 5% of contract price |
| Damages for delay | 0.1 % per day with limit as 10 % of the Construction Contract Price |
| Deductions of Labour Cess : | 1 % of contract price for construction workers welfare fund from all R.A. Bills & final Bill. |
| Deductions of Income Tax : | % as applicable of contract price from all R.A. Bills & final Bill. |
| Deductions of Material Testing : Expenses. | The material testing fee at the rate of 0.5 % shall be deducted from every running bill of the contractor. |

SCHEDULES

CONTENTS

| Sr. No. | Particulars | | |
|------------|----------------|---|--|
| 1.0 | Schedule - I | : Deviation from Technical Specifications | |
| 2.0 | Schedule - II | : Deviations from Conditions of Contract | |
| 3.0 | Schedule - III | : Work Schedule | |
| 4.0 | Schedule - IV | : Sub-Contractors | |
| 5.0 | Schedule – V | : Project Execution Plan | |

SCHEDULE - I

DEVIATIONS FROM TECHNICAL SPECIFICATIONS

All deviations from Technical Specifications shall be filled in by the Bidder clause by clause in this Schedule. If deviations are discussed in the covering letter, then reference to the letter shall be made below:

| Specification No. | Item (or Clause) | Deviation | Covering Letter Item | Price Tag in Rupees + or - |
|----------------------|---------------------|-----------|-------------------------|-------------------------------|
| 1 | 2 | 3 | 4 | 5 |
| | | | | |
| | | | | |
| | | | | |
| | | | | |
| | | | | |
| | | | | |
| | | | | |
| | | | | |

The bidder hereby certifies that the above mentioned are the only deviations from Technical Specifications of the Bid.

SIGNATURE

NAME

DESIGNATION

COMPANY

DATE

SCHEDULE - II

DEVIATIONS FROM CONDITIONS OF CONTRACT

All deviations from the Conditions of Contract (Part I - General Conditions and Part II - Conditions of Particular Application) shall be filled in by the Bidder clause by clause in this Schedule. If deviations are discussed in the covering letter, then reference to the letter shall be made below:

| Item (or clause) | Covering Letter Item | Deviations | Price Tag in Rupees + or - |
|------------------|-------------------------|------------|----------------------------------|
| 1 | 2 | 3 | 4 |
| | | | |
| | | | |
| | | | |
| | | | |
| | | | |
| | | | |
| | | | |
| | | | |

The Bidder hereby certifies that the above mentioned are the only deviations from the Conditions of Contract.

SIGNATURE

NAME

DESIGNATION

COMPANY

DATE

SCHEDULE - III

WORK SCHEDULE

The Bidder shall submit the following after award of work in sufficient details (Separate Sheets) for evaluation ensuring to execute it within the Time of Completion.

1.0 **Construction Schedule**

1.1 This shall consist of a detailed bar chart showing in sufficient details completion of various sections of Work and the date and order in which the Bidder proposes to carry out different parts of the Works. The bar chart shall indicate the principal quantities of work forecast for execution monthly and payments expected to be made in connection therewith. In preparation of the programme, appropriate allowance should be made for loss of time due to inclement weather. This construction schedule shall form the basis for preparation of detailed CPM schedule to be furnished after the award of the Contract.

The Bidder shall keep above in view while preparing his Work Schedule.

2.0 **Employment Schedule**

This shall consist of a chart showing deployment of monthly manpower (including skilled and unskilled labour of various categories) commensurate with the Construction Schedule.

3.0 Equipment Use Schedule

This shall consist of a chart showing monthly deployment of equipment (under various categories) commensurate with the Construction Schedule.

SIGNATURE NAME DESIGNATION COMPANY

DATE

SCHEDULE - IV

SUB CONTRACTORS

The bidder shall enter in this Schedule, a list of the sections and appropriate value of the work for which he proposes to use sub-contractors, together with the names and addresses of the proposed subcontractors. The bidder shall also enter a statement of similar works previously executed by the proposed subcontractors, including description, location and value of work, year completed, and name and address of the Employer/Engineer. Notwithstanding such information the bidder, if awarded the Contract, shall remain entirely and solely responsible for the satisfactory completion of the Works.

| Element of Work | Approxi mate Value | Name & Address of Subcontractor | Statement of Similar works Previously Executed by the Sub Contractor | Location & Value of similar Works executed | Name of the Employer | Year completed |
|--------------------|--------------------------|---------------------------------------|--|--|----------------------------|-------------------|
| | | | | | | |
| | | | | | | |
| | | | | | | |

SIGNATURE

NAME

DESIGNATION

COMPANY

DATE

SCHEDULE V

PROJECT EXECUTION PLAN (PEP)

The Bidder is required to furnish Project Execution Plan (PEP) in the following format after award of work. A brief but clear PEP is required for describing planning and programming of the works.

- a) **Project Strategy :** Outline statement of the organisation and methods to be employed by the applicant to undertake the work.
- b) **Organisation Chart :** Preliminary Organisation Chart indicating relationship between the site management and the head branch office, the on site direct works operations, the sub-contractors, suppliers and the supervising Consulting Engineer.
- c) **Responsibility of Key Personnel :** Identify key personnel with management responsibilities by activity or section of work.
- d) **Quality Management System :** Provide a description of the Quality Assurance / Quality Control System: organization and procedures in use and identify the accreditation authority.
- e) **Project Safety Plan:** Provide a statement outlining the Health and Safety Plan operated by the company.
- f) Contractor shall indicate any permanently established groups within the organisation which would provide specific functions in the execution of the contract.
- g) **Program/Bar Chart** showing major activities.
 - Signature Name Designation Company Date

TECHNICAL DATA SHEETS

PROCESS & MECHANICAL EQUIPMENT

INLET / STILLING CHAMBER

| No. of Units | |
|--|--|
| Design Flow | |
| Max. Flow (M3/Hr.) | |
| Detention Time at Design Flow (M3/Hr.) | |
| Capacity | |
| Size (M x M) | |
| Liquid depth | |
| Design. F.S.L., m | |
| M.O.C. | |
| Free board | |
| Drain Valve (diameter mm) | |

PARSHALL FLUME (RAW WATER)

| No. of Units | |
|---------------------------|--|
| Design Flow | |
| Max. Flow | |
| Size of Channel | |
| Liquid depth | |
| Free board | |
| Range of flow measurement | |
| Material of Construction | |

FLASH MIXER

| No. of Units | |
|--------------------------------------|--|
| Design Flow (M ³ /Hr.) | |
| Detention Time at Design flow (min.) | |
| MOC | |
| Size (M x M) | |
| Liquid depth | |
| Free board | |
| Drain Valve Size (mm) | |
| Design F.S.L., m | |

CLARIFLOCCULATOR

| No. & Type | |
|---|--|
| MOC of Clariflocculator | |
| Design Flow (M ³ /Hr.) | |
| Max. Flow (M ³ /Hr.) | |
| Inside diameter of Clarifier (M) | |
| Water depth of Clarifier (M) | |
| Water depth of Flocculator(M) | |
| Free Board of Clarifier (M) | |
| Dia of Flocculator (M) | |
| Detention time in Flocculator (Min.) | |
| Detention time for Clarification (Min.) | |
| Surface loading in Clarification zone $(M^3/M^2/Hr.)$ | |
| Width of Rotating Bridge walkway (mm) | |
| Number of scraper arms | |
| Support system of Mechanism | |
| Speed of scrapper Mechanism (cm/sec) | |
| MOC of Bridge & Walkway | |
| MOC of Flocculator paddle | |
| MOC of Flocculator Shaft / Type | |
| MOC of scrapper Mechanism | |
| MOC of weir plate | |
| Type / No. of Flocculator (Paddle) | |
| RPM of Flocculator | |
| Details of Gear box | |
| HP/RPM of Bridge Drive | |
| HP/RPM of Flocculator Drive | |
| De-sludging system | |
| Pipe size/material/class | |
| Make and type of valve | |

RAPID GRAVITY SAND FILTERS

| No. of filters | |
|-------------------------|--|
| Total Flow | |
| Design Flow /Filter Bed | |

| No. of section in each filter | |
|--|--|
| Internal Dimension of Filter (M x M) | |
| Size of filter beds (m2) | |
| Type of Filter | |
| Filtration Rate (M ³ /Hr.) | |
| Maximum starting rate (m/h) | |
| Effective size of filter sand | |
| Uniformity coefficient of filter sand | |
| Depth of filter sand | |
| Depth of graded support (gravel) | |
| Water depth Above filter media (Meter.) | |
| Backwash Interval (HRS) | |
| Total out put between two back wash (M ³) | |
| MOC of nozzles on floor | |
| Free Board above water level (M) | |
| Backwash pipe size (mm) | |
| Inlet pipe size (mm) | |
| Outlet pipe size (mm) | |
| | |
| Air inlet pipe size (mm) Wastewater outlet pipe size (mm) | |
| Total waste water quantity Per filter back wash M^3) | |
| | |
| Type of back wash | |
| Rate of air scouring | |
| Duration of air scouring | |
| Rate of backwash flow | |
| Total Backwashing period (Minutes) | |
| Backwash Water velocity through media (M/Hr) | |
| Air velocity through media (M/Hr.) | |
| Filter valves and gates (all) sizes | |
| Filter Inlet Valve/gate | |
| Filter outlet Valve | |
| Flow restrictor Valve | |
| Backwash Inlet Valve | |
| Wash Water Drain Valve/gate | |
| Air Inlet Valve | |
| Filter Drain Valve | |
| Under Drain system – Type | |

| No. of Nozzles | |
|--|--|
| Make / type of valve and gate actuators | |
| Make / Type of Loss of Head and Rate of Flow | |
| Indicators | |

AIR SCOUR BLOWER

| Nos. | |
|---------------------------------|--|
| Туре | |
| Capacity (NM3/Hr.) | |
| Head (MWC) | |
| Details of Acoustic Insulation | |
| MOC | |
| Shaft | |
| Lobes | |
| Casing | |
| Side Plates and any other parts | |
| Gears | |
| Base Frame | |
| RPM of Blower | |
| Motor HP/RPM | |

BACKWASH WATER OVERHEAD TANK

| No. | |
|--|--|
| MOC | |
| Dimension | |
| Capacity, effective (M ³) | |
| Location | |
| Elevation of Invert Level from floor (M) | |

BACKWASH WATER SUMP

| No. | |
|---------------------------------------|--|
| MOC | |
| Dimension | |
| Capacity, effective (M ³) | |
| Location | |
| Size of Pump House | |

BACKWASH WATER PUMP

| No. | |
|--------------------------------|--|
| Туре | |
| Make | |
| Capacity (M ³ /Hr.) | |
| Head (MWC) | |
| Pump Efficiency | |
| Maximum Size of solid handle | |
| Shut off Head | |
| Pump input KW | |
| MOC | |
| Shaft | |
| Impeller | |
| Casing | |
| Motor HP/RPM | |
| Flow meter for back wash line | |
| Range of Flow meter (M3/Hr.) | |

CHLORINE CONTACT TANK

| Design Flow | |
|-----------------------------|--|
| No. of Units | |
| Retention time | |
| Capacity | |
| Size of each tank / chamber | |
| Liquid depth | |
| Free board | |
| Material of Construction | |

CHLORINATORS (PRE & POST)

| No. of Pre-Chlorinator | |
|---------------------------------------|--|
| No. of Post-Chlorinator | |
| Capacity of pre chlorinator (kg/hr.) | |
| Capacity of post chlorinator (kg/hr.) | |
| Туре | |
| Make | |
| MOC of Chlorinator | |

| MOC of Chlorinator gas Line | |
|------------------------------------|--|
| MOC of Chlorine Solution Line | |
| Diameter of Chlorine Solution Line | |
| Accessories for chlorinators | |
| Control unit | |
| Vaccum regulator | |
| Ton container adapter | |
| Injector | |
| Vaccum and vent tubing | |

PRE-CHLORINE BOOSTER PUMP

| No. | |
|--------------------------------|--|
| Туре | |
| Capacity (M ³ /Hr.) | |
| Head (MWC) | |
| Pump Efficiency | |
| Pump input KW | |
| KW rating of Motor | |

POST-CHLORINE BOOSTER PUMP

| No. | |
|--------------------------------|--|
| Туре | |
| Capacity (M ³ /Hr.) | |
| Head (MWC) | |
| Pump Efficiency | |
| Pump input KW | |
| KW rating of Motor | |

CHLORINATION ROOM

| Size of Chlorination Room | |
|---------------------------|--|
| Height of room | |

CHLORINE TONNER ROOM

| Size of Tonner Room | |
|--------------------------|--|
| No. of Tonners | |
| Capacity of each tonners | |
| Capacity of Hoist | |

PAC / ALUM SOLUTION (DOSING) TANK

| No. | |
|----------------------------|--|
| Size | |
| Capacity (M ³) | |
| MOC | |
| Internal Lining | |
| MOC of Agitator | |
| RPM of Agitator | |
| Make of Agitator | |
| KW rating of Agitator | |

DIRTY WATER SUMP

| No. | |
|--|--|
| MOC | |
| Dimension | |
| Capacity, effective (M ³) | |
| Location | |
| Elevation of Invert Level from floor (M) | |
| Size of Pump House | |

THICKENER FEED PUMP

| Qty. | |
|--------------------------------|--|
| Туре | |
| Make | |
| Capacity (M ³ /Hr.) | |
| Head (MWC) | |
| Pump Efficiency | |
| Maximum Size of solid handle | |
| Pump input KW | |
| Motor KW/RPM | |

THICKENER

| No. of thickener | |
|----------------------|--|
| Type of thickener | |
| Inlet solids Kg./day | |

| Inlet sludge solids concentration (%) | |
|--|--|
| Outlet sludge solids concentration (%) | |
| Specific gravity of Sludge | |
| Solid loading rate kg/m2/day | |
| Hydraulic loading rate kg/m3/day | |
| Size of each unit | |
| Liquid depth | |
| Bottom slope | |
| Free board | |
| Material of Construction | |

THICKENED SLUDGE SUMP & PUMP HOUSE

| Sludge flow (m3/hr) | |
|------------------------------------|--|
| Holding time in Sludge Sump (hrs.) | |
| Liquid depth (m) | |
| Length (m) | |
| Width (m) | |

CENTRIFUGE FEED PUMP

| Qty. | |
|--------------------------------|--|
| Туре | |
| Make | |
| Capacity (M ³ /Hr.) | |
| Head (MWC) | |
| Pump Efficiency | |
| Maximum Size of solid handle | |
| Pump input KW | |
| Motor KW/RPM | |

DWPE DOSING SYSTEM

| Dewatering Polyelectrolyte Solution Dosing Tank with Agitator | |
|--|--|
| No. of Tanks | |
| MOC | |
| Capacity (m3) | |
| Holding time (hrs.) | |
| Liquid depth (m) | |

| Length (m) | |
|-------------------------|--|
| Width (m) | |
| Free board | |
| | |
| Agitator Type | |
| Nos. | |
| MOC | |
| Speed (RPM) | |
| Motor (KW) | |
| DWPE Dosing Pump | |
| No. of pumps | |
| MOC | |
| Туре | |
| Capacity (LPH) | |
| Head (m) | |
| Motor Rating – KW / RPM | |

CENTRIFUGE

| Capacity (m3/hr) | |
|------------------------------|--|
| Туре | |
| Quantity (Working + Standby) | |
| Material of Construction | |
| Bowl | |
| Screw | |
| Motor rating (KW) | |

FILTRATE SUMP

| No. | |
|---------------------------------------|--|
| MOC | |
| Dimensions | |
| Capacity, effective (M ³) | |

FILTRATE PUMP

| Qty. | |
|--------------------------------|--|
| Туре | |
| Make | |
| Capacity (M ³ /Hr.) | |

| Head (MWC) | |
|-----------------|--|
| Pump Efficiency | |
| Pump input KW | |
| Motor KW/RPM | |

CHEMICAL CUM ADMINISTRATION BUILDING

| Ground floor carpet area (Min.) | |
|----------------------------------|--|
| Ground Floor clear height (Min.) | |
| First floor carpet area (Min.) | |
| First Floor clear height (Min.) | |
| Size | |

AIR BLOWER ROOM

| Floor carpet area (Min.) | |
|---------------------------|--|
| Floor clear height (Min.) | |
| Size | |

CLEAR WATER RESERVOIR & PUMP HOUSE

| Design Flow | |
|-----------------------------|--|
| No. of Units / Compartments | |
| Retention time | |
| Capacity | |
| Size of each Compartment | |
| Liquid depth | |
| Free board | |
| Material of Construction | |
| Size of pump house | |
| | |

ELEVATED SERVICE RESERVOIR

| Capacity | |
|--------------------------|--|
| Staging Height | |
| Liquid depth | |
| Free board | |
| Material of Construction | |

DATA SHEET OF CLEAR (TREATED) WATER PUMPS – VERTICAL TURBINE (VT) PUMP AT CLEAR WATER PUMP HOUSE

| SR. NO. | PARTICULAR | DESCRIPTION | DATA TO FILL BY BIDDER |
|------------|--|------------------------|---------------------------|
| 1.0 | LIQUID DATA | | |
| 1.1 | Liquid handled | Water | |
| 1.2 | Specific gravity | 1.0 | |
| 1.3 | Temperature | Ambient temp. | |
| 1.4 | Suc. Pre.@ rated capacity-m | Flooded | |
| 2.0 | PUMP DATA | | |
| 2.1 | Make | Please Furnish Detail | |
| 2.2 | Pump type | Vertical Turbine | |
| 2.3 | Pump Model | Pl furnish | |
| 2.4 | Number of pumps - Nos. | Pl furnish | |
| 2.5 | Type of duty | Continuous | |
| 2.6 | Design capacity-m ³ /hr. | As specified | |
| 2.7 | Total Bowl Head-mlc | As specified | |
| 2.8 | Guaranteed Bowl efficiency at rated capacity-% | Min. w/o -ve tolerance | |
| 2.9 | Bowl input at rated duty-KW | Pl furnish | |
| 2.10 | Rated Speed of pump- RPM | Max. 1450 | |
| 2.11 | Max. Bowl Input KW @ Rated Impeller. | Pl furnish | |
| 2.12 | Reco. Drive motor rating- KW | Pl furnish | |
| 2.13 | Min. Submergence Required, m | Pl. furnish | |
| 2.14 | Shut off head-m | Pl. furnish | |

Signature of the Bidder & Company Seal

PIPE SCHEDULE

| Sr. No. | Service | From | То | Pipe MOC | Pipe Size, mm |
|------------|---------|------|----|-------------|------------------|
| | | | | | |
| | | | | | |
| | | | | | |
| | | | | | |
| | | | | | |
| | | | | | |
| | | | | | |
| | | | | | |
| | | | | | |
| | | | | | |
| | | | | | |
| | | | | | |
| | | | | | |
| | | | | | |
| | | | | | |

Signature of the Bidder & Company Seal

DATA SHEET FOR ELECTRICAL

| DATA | SHEET 1 | FOR | ELECT | RICAL | ITEMS |
|------|---------|-----|-------|-------|-------|
|------|---------|-----|-------|-------|-------|

| SR. NO | DESCRIPTION | PARTICULARS TO BE FILLED BY BIDDER |
|-----------|--|---------------------------------------|
| А | HT PANEL BOARD | |
| 1 | General | |
| а | Manufacturer/ Type | |
| b | Bus Bar | |
| | Material (Al/Cu) | |
| | Continuous rating, A | |
| с | Short time (one second) withstand rating KA (rms) | |
| d | Clearances | |
| | Between phase, mm | |
| | Between live part and earth, mm | |
| е | One minute power frequency withstand voltage KV | |
| C | (rms) | |
| f | Thickness of steel sheey | |
| | Frame, mm | |
| | Door, mm | |
| | Cover, mm | |
| g | Dimensions of cubicle (mm) | |
| | Draw out space required in front (mm) | |
| | Weight of heaviest cubicle (Kg) | |
| 2 | Circuit Breaker | |
| а | Manufacturer/ Type | |
| b | Rated voltage, V | |
| С | Rated current for various circuit breakers | |
| | Normal, A | |
| | De-rating factor for site conditions, A | |
| | When installed within cubicles, A | |
| d | Method of closing | |
| | Normal | |
| | Emergency | |
| e | Type of closing mechanism | |
| f | Normal ratting of closing mechanism (V/W) | |
| g | Type of tripping mechanism | |
| <u>h</u> | Normal rate of tripping mechanism (V/W) | : |
| i | Spring changing motor details | |
| | Output rating (KW) | |
| 2 | Rated voltage (V) | |
| 3 | FUSES (FOR PT'S) | |
| <u>a</u> | Manufacturer | |
| b | Type | |
| <u>C</u> | Rated Voltage, V | |
| d | Rated Current, A | |
| e f | Category of duty Rupturing capacity (prospective current), KA | |

| В | DISTRIBUTION TRANSFORMERS | |
|-----|---|---|
| 1 | Manufacture / Type | |
| 2 | Applicable standard & Eff. Class | |
| 3 | Type of cooling | |
| 4 | Rated KVA | |
| 5 | Rated Voltage of | |
| | HV winding (KV) | |
| | LV Winding (KV | |
| 6 | Voltage ratio at different taps | |
| 7 | Rated frequency | |
| 8 | Temperature rise | |
| | of oil by thermometer (OC) | |
| | of winding by resistance (OC) | |
| 9 | No. of phases | |
| 10 | Vector group reference | |
| 11 | Guaranteed no load losses at 75 degree Centigrade, | |
| 11 | rated frequency at rated voltage (KW) | |
| 12 | Total losses at normal ratio, rated frequency and | |
| | maximum attainable temperature at site (KW) | |
| 13 | Tolerance on losses | |
| 14 | Percentage impedance of winding at rated current, | |
| 1-7 | rated frequency at 75 degree centigrade (%) | |
| 15 | Efficiency at rated voltage, rated frequency at 750 | |
| | Centigrade (%) | |
| 16 | Noise level, Db | : |
| 17 | Overall dimensions (L x B x H) | : |
| 18 | Crane lift required (mm) | : |
| 19 | Complete transformer weight (Kg) | : |
| 20 | Are radiators detachable (Yes/ No) | : |

Signature of the Bidder & Company Seal

GUARANTEE STATEMENT

Schedule of Performance Guarantees

Table-I: Plant Output Water Quality

| S. | Name of Unit | Parameter | Unit | Guaranteed Figure | | |
|-----|---|-----------------------------|----------------|------------------------|-------------|--|
| No. | | | | 24 Hours Average | Any Instant | |
| 1. | Clariflocculator | Outlet water Turbidity | N.T.U | | | |
| 2. | Clarifloccualtor Outlet / Filter Inlet Channel | Residual Chlorine | mg/lit | | | |
| 3. | Filter outlet / CWR Outlet / CWR Pump Header | Turbidity | N.T.U | | | |
| 4. | CWR Outlet or CWR Pump Header | Residual Chlorine | mg/lit | | | |
| 5. | CWR Outlet or CWR Pump Header | Colour | Pt-Co Scale | | | |
| 6. | CWR Outlet or CWR Pump Header | рН | - | | | |
| 7. | CWR Outlet or CWR Pump Header | Fecal Coliform Organism. | - | | | |

Table-II: Plant Output

| S. | Name of Unit | Parameter | Unit | Guaranteed Figure | | |
|-----|------------------|---|---------------------|--------------------------|--|--|
| No. | | | | | | |
| 1. | Input of Plant | Max. Raw input water requirement to give 50MLD output with guaranteed quality | MLD | | | |
| 2. | Clariflocculator | Maximum Continuous output from each unit meeting Guaranteed quality | M ³ /hr. | | | |
| 3. | Filter | Minimum filter run period between two back wash for 90% time of the year | Hrs. | | | |
| 4. | Filter | Minimum filter run period between two back wash, any time in the year | Hrs. | | | |
| 5. | Filter | Maximum Continuous output from each filter meeting Guaranteed quality | M ³ /hr. | | | |
| 6. | Pre Chlorinator | Maximum Continuous output from each chlorinator | Kg/hr. | | | |
| 7. | Post Chlorinator | Maximum Continuous output from each chlorinator | Kg/hr. | | | |

Table III: Chemical Consumption (Guaranteed)

| Chemical Description | Units | Qty. |
|------------------------------|--------|------|
| | | |
| Chlorine (Pre-chlorination) | Mg/l | |
| | Kg/MLD | |
| | | |
| Chlorine (Post-chlorination) | Mg/l | |
| | Kg/MLD | |
| | | |
| Alum | Kg/Day | |
| | Kg/MLD | |
| | | |
| Other Chemicals (if any) | | |

Table IV: Power Consumption (Guaranteed)

| The average daily power requirement is guaranteed to be (shall match with figure as furnished in power statement as per Power Guar. Statement at Table | Not more thanUnits. |
|---|---------------------|
| V): | |

The guaranteed power requirement for each month or for duration as per duration / billing cycle of power supply company shall be calculated based on daily power requirement guaranteed by bidder as above for the calculation of Liquidated Damages for failing O&M performance guarantees.

Signature of the Bidder & Company Seal

Table V)POWER GUARANTEE STATEMENT FOR 50MLD WATER WORKSFACILITY (WTP & CWPH) AT RAIYADHAR, RMC

| Sl. No. | Name of Unit | Wkg | S/B | Total | Motor Rating, KW | Pump Input, KW | Motor Input, KW = Pump Input KW / Mot. Eff. | Running Hours | | Total KWH for Daily Consumpt ion |
|------------|--|------|-----|-------|------------------------|----------------------|--|----------------------------|--------------|--|
| | | | | | | | | Each Unit per Day | Total | |
| | | 1 | 2 | 3 | 4 | 5 | 6 = 5 / Mot. Eff. | 7 | 8 = 1 * 7 | 9 = 6 * 8 |
| | GUARA | NTEE | DTC | DTAL | POWER | CONSU | MPTION IN | KWH | OF | |
| | GUARANTEED TOTAL POWER CONSUMPTION IN KWH OF DAILY CONSUMPTION: | | | | | | | | | |

Notes:

- 1. Load Statement to include Lighting & Misc. Load for Guarantee purpose.
- 2. Units to be mentioned by bidder as per tender specifications and may consider addl. eqpt. as required for meeting process requirement.
- 3. Bidder shall note that column no. 9 shall add up to the power consumption per day guaranteed by the bidder.
- 4. In case of discrepancy, the data given in the above Table shall be considered as final.

Signature of the Bidder & Company Seal