



DEENDAYAL PORT AUTHORITY
Mechanical Engineering Department



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No. MS/WK/4049-Pt.I /Gim-PC/211

Date:21.06.2023

Expression of Interest

Sub.: "Supply, installation, testing and commissioning of essential & integral components for the 02 nos. installed PSA oxygen units of 1000 LPM capacity each at Sir T Hospital Bhavnagar, donated by Deendayal Port Authority (DPA), under CSR scheme."

Sir,

Deendayal Port Authority, an autonomous body under Ministry of Ports, Shipping & Waterways, Govt. of India, intends to install the essential & integral components for already installed 02 nos. PSA oxygen units of 1000 LPM capacity each at Sir T Hospital Bhavnagar, which were donated by Deendayal Port Authority (DPA), under CSR scheme.

Kindly submit your Expression of interest along with budgetary-offer for the subject work on the basis of the scope of work enclosed herewith. Expression of Interest should include profile of your firm, work experience in similar works, summary of turnover, (if any), on the above mentioned E-mail Ids.

The rates quoted must be inclusive of all costs such as tools, tackles, labour, transportation and other auxiliary charges for successful completion of the work excluding GST. The GST applicable shall be shown separately, which shall not be considered for evaluation purposes

Your EOI with budgetary offers for the above work should reach this office via either courier or email mentioned above, till 28.06.2023 on or before 1530 hours.

Thanking you.

Yours faithfully,

Sd/-

Superintending Engineer (Mech.)
Deendayal Port Authority

1.GENERAL:

The Deendayal Port Authority intends to carry out the work of **“Supply, installation, testing and commissioning of the essential & integral components for the installed 02 nos. PSA oxygen units of 1000 LPM capacity each at Sir T Hospital Bhavnagar, donated by Deendayal Port Authority (DPA), under CSR scheme”**. All essential & integral components shall be complying relevant standards and norms. The tentative & indicative technical specification and terms and condition are mentioned below.

2.SCOPE OF WORK:

The contractor shall visit the site and access the nature of work before bidding.

The following will be the broad scope of work of the successful bidder, but not limited to:

The scope of work includes complete Supply, installation, testing and commissioning of essential & integral components as mentioned below (not limited to) for existing 02 nos. PSA Oxygen units of 1000 LPM capacity each installed at Sir T Hospital, Bhavnagar, for successful running and utilization of the oxygen plants.

Supply system should be designed to achieve continuity of supply to the Terminal Units in normal condition and in a single fault condition.

(A) Automatic Change Over set up with Panel:

The contractor shall have to supply, install, test, commission an automatic change over set up with panel which shall be compatible with existing oxygen plants. Automatic Change over set up with panel should comprises of the following:

- i. Ensure continues oxygen supply at optimum pressure of 4-5 bar.
- ii. Continuous Flow of oxygen to delivery manifold/ line
- iii. Changeover from “Duty” to the “Stand-by” source shall be Automatic & Digital type with nominal capacity of 2000 LPM, tentative Flow Rate of 100 to 2500 LPM & tentative connection Size of $\frac{3}{4}$ ”.
- iv. The working principle shall be preferably based on pneumatic pressure
- v. The system shall comprise of Audio Visual Alarm system & pressure gauges. Pressure Monitoring and Alarm Systems are to be provided to alert the medical staff to initiate necessary timely action.
- vi. Pneumatic relief valve shall be provided in Hospital Distribution Line.
- vii. The system shall be installed by the contractor complete in all respects for successful & smooth operation of the changeover panel viz., connection & fittings, copper heavy duty piping, regulator valve with gauge, Non Return Valve, Pressure Switch, Pressure Gauge, Pressure Reducing Valve, 50 mm or as required Copper Oxygen Tubing with necessary accessories, Junction-box, wiring etc. complete in all respect.
- viii. Output: Sufficient oxygen pressure of Oxygen (-2 bar or as per medical standard) shall be available at all bed points.
- ix. Necessary Copper 50mm size Piping Length (approx. 150m) as per requirement to be included for completion of the work.

- x. The Contractor has to supply, fabricate, install, connect, test, & commission the complete medical oxygen piping system including valves, flow meters, pressure gauges, filters, terminal units, bends, tees, connectors, accessories etc. from source of supply (1) existing 02 nos. PSA Oxygen generators each having capacity of 1000 LPM, and (2) existing liquid oxygen system to delivery manifold in the hospital.
- xi. The Copper pipes shall comply EN13348/ BS EN 1057 Medical grade. Necessary Test certificate to be produced during supply stage of the work.
- xii. The pipe shall be suitable for installing vertically or horizontally without sagging or distortion.
- xiii. All tubing, valves and fitting shall be thoroughly checked for any grease, oil or other combustible material during fabrication, installation work.
- xiv. All joints to be connected by brazing suitable for medical grade oxygen piping/tubing work.
- xv. During the brazing of pipe/tube connections the interior of the pipe shall be purged continuously with Nitrogen.
- xvi. Pipelines/Tubing network shall be adequately supported at sufficient intervals.
- xvii. Piping network shall be cleaned, pressure tested after installation and rectified leaks if any found during testing.
- xviii. Suitable isolation valve to be installed at locations for isolation of the system for servicing or repair.
- xix. All valves shall be of the lever ball type, flanged O-ring seal connections.
- xx. All Terminal units shall be leak proof and allow plugging of probes from front with push to insert and press to release mechanism for probe, Self-sealing valve on disengaging the probe, Non return valve for ease of line servicing and repairing and Color-coded Gas Specific front plate.
- xxi. Piping network along with accessories shall be painted with suitable color coding norms.
- xxii. The indicative conditions/ specifications are as follows:

Sr. No	Technical specifications/ composition	
1	Pipe material	Copper Pipes will be Solid drawn, seamless, deoxidized, non- arsenical, half hard tempered and degreased, materials.
2	Fittings	End-feed type, made from the same grade of copper as the pipes, and in accordance with the requirements of BS-EN1254-1: 1998 Part 1.
3	Delivery to site	In degreased condition, plugged or capped at both ends and supplied sealed in protective polythene bags, accompanied by certificate.
4	Joints, on site	To be brazed, except for mechanical joints used for components, employing a method that permits the joints to maintain their mechanical characteristics upto 600 deg. C.
5	Brazing system	Flux less brazing using a copper-phosphorous brazing alloy to BS-1845.
6	Pipe clamps	Shall be non-reactive to copper and be of non-ferrous or non- deteriorating plastic suitable for the diameter of the pipe.

7	Pipeline supports	Spacing not to exceed 1.0M, irrespective of the pipe diameter.
8	Passage through walls, partitions, floors	Through suitable sleeves.
9	Earthing	To be connected to one or more earth terminals.
10	Painting	All exposed pipes to be painted with two coats of synthetic enamel paint (Canary Yellow), the color codification complying with ISO 5359 / IS 2379.
11	Marking and colour coding	To marked with the name and / or symbol adjacent to shut-off valves, at the junctions and the changes of direction, before and after walls and partitions, etc. at the intervals of no more that 10M and adjacent terminal units.
12	Direction marks	Marking to include arrows denoting direction of flow and letters used for marking shall not be less than 6mm high.
13	Identification	All concealed pipes to have gas identification bands/ labels are appropriate distance, similarly all pipes which need embedding in the wall will to be tested/ painted/ labled and properly insulated in accordance with ISO 5359.
14	Post-installation	After erection, the pipelines are to be flushed and purged clean with dry nitrogen gas.
15	Testing	Pressure testing using dry nitrogen gas at 1.5 times the working pressure for at least 24 hours. System should exhibit its integrity and no-leakage. All contraindications, if any, to be carefully examined, problems diagnosed and necessary rectifications/ substitutions carried out, and test repeated after re-purging the lines.

(B) Voltage Stabilizer:

The contractor shall have to supply, install, commission Servo voltage stabilizer of minimum rating of 300 kVA x 02 nos. or existing oxygen plants and allied equipment as per manufacturer guideline. The indicative specifications are as follows:

- i. Input Voltage Range: 380 – 480 V
- ii. Output Voltage: 415 V
- iii. Output Voltage Accuracy: $\pm 1\%$
- iv. Frequency: 47 – 53 Hz.
- v. Type: Suitable for Unbalance Supply and Load Conditions
- vi. Response Time: 10 msec max.
- vii. Efficiency; $>95\%$
- viii. Rate of Correction: upto 105 V / Sec
- ix. Duty cycle: 100 % Continuous / 110 % for 60 Sec. / 150 % for 10 Sec.
- x. Cooling: Oil Cooled
- xi. Operating Temperature: 0 – 45° C. max.
- xii. Relative Humidity upto 90 %

(C) Pressure Safety Valve:

The contractor shall have to supply, install, commission Pressure Safety Valve x 02 nos. The indicative specifications are as follows:

- i. Pressure Range: 4-12 kg/cm², which can be set as per requirement.
- ii. Operating pressure: 0-5 kg/cm²
- iii. MOC: SS/ Pure Brass
- iv. Indicative Size: 1" diameter.
- v. Standard: Relevant ASME

(D) Certification:

The bidder shall have to conduct air quality test and obtain air quality check certificate for each PSA Oxygen plant, from government recognized and accredited laboratory after installation and commissioning of complete essential components for medical grade oxygen.

3. GENERAL TERMS AND CONDITIONS:

- 1) Work should be carried out in good workmanship, and only skilled technician & staffs may be deployed to execute the entire work till commissioning.
- 2) The materials/ equipment/ items to be installed for the said supply shall be latest, original, interchangeable & of relevant standards.
- 3) The above section describes certain broad & indicative requirement to which the contractor shall work, but this shall not absolve the contractor from his responsibility to carry out the work in apt and proper manner and acceptable in all respects as per standard practice even if there is any omission in the prescribed scope/ specification.
- 4) The contractor shall be fully responsible for any damage or breakage of civil work during execution of work & contractor shall make goods the same without any extra cost.
- 5) The contractor will ensure to follow all suitable safety arrangement/rules during execution of the work.
- 6) The period for completion of the work shall be **(2) two months**, from the date of issue of work order.
- 7) The Defect Liability period of complete system is 06 months from date of successful testing and commissioning.
- 8) During DLP period all complaints/defects/defective parts to be replace by the vender within 48 hrs. after receiving complaint from department. In case of failure to attend and rectify the complaint the work shall got done by the department on the risk and cost of contractor and shall be recovered from security deposit.
- 9) Security deposit amount shall be released after successfully completion of Defect Liability Period of 06 months.
- 10) After Completion of complete work it should be handed over to client i.e., Sir T Hospital, Bhavnagar with duly verified record of successful testing and commission including operation and service manual etc.
- 11) All the accommodations and food facility and other facility for team/staff to execute the work shall have to arrange on his own level however the storage facility for the raw material shall be provided by Sir T Hospital, Bhavnagar. The contractor shall also arrange for transportation of staffs & materials as required from & to work site.

- 12) The contractor is expected to have full knowledge of supply of items, work site and nature of application work and no claim what-so-ever shall be entertained in this regard. Also, Party shall also visit and inspect site and acquaint himself with all local condition and working condition at and around the site. No dispute/claims what-so-ever shall be entertained for the work of any nature arising out of local conditions
- 13) The Port will not be responsible for any damage or loss of any of the materials and for any damage / accident to the contractor's personnel.
- 14) The firm shall arrange necessary watch and ward for their materials till the completion of work.
- 15) The firm shall comply the safety standards for welding works/brazing works and shall arrange welding set/brazing set if required at their own cost and obtain necessary fire permission from the Sir T Hospital.
- 16) The contractor shall be required to execute the work in such a way so as not to cause any damage, hindrance or interference to the activities and work going on in the area adjoining thereof. Any damages shall be repaired by him at his own cost. If he does not repair the damages in reasonable time period, the same will be repaired by DPA at the sole risk and cost of contractor and amount will be recovered from the bill due.
- 17) All the rules and regulations in force for entry inside the site premises shall be observed and following by the contractor and by his employee staff etc. All the applicable labour laws shall be followed by the contractor.
- 18) The complete responsibility for safe working of the staffs will be borne by the Contractor. DPA will not be responsible for any loss, damage or accident to any of the staff. The Contractor have to provide insurance coverage of engaged manpower.
- 19) The staffs should have a sober behavior and obedient. Any staff coming in intoxicated condition will not be accepted by the administration, and, if not replaced shall be marked as absent, and, accordingly, penalty shall be levied.
- 20) The contractor has to provide the required PPE kit to his engaged staffs viz. helmet, safety shoes, gloves, masks, ear-buds etc.
- 21) Income Tax and surcharge as applicable will be deducted as per the prevailing rules.
- 22) The firm shall submit their rates as per the Schedule 'B'. Rate should be inclusive of all taxes, excluding GST. Applicable GST on the taxable value of supply of Goods or Services or both covered in this tender/contract will be paid by Port on production of bill mentioning GSTIN. Applicable Statutory recoveries including TDS under Income Tax, TDS under GST acts will be deducted/ recovered while accounting for or making payments to the Vendor as per the applicable laws. Contractor / Service provider / Supplier etc. has to ensure timely and proper filling of GSTR-1 so that Deendayal Port Authority can avail input tax credit in timely manner. In case DPA not allowed input tax credit due to failure on part of the contractor/Service provider/Supplier etc., it will be a financial loss to the DPA and therefore same shall be recovered from the payment/deposit of the contractor/service provider/supplier
- 23) **WARRANTY:** The contractor shall warrant that all piping and equipment, fittings shall be brand new and of first class workmanship. The warranty period of the installed system shall be valid up to six months (6 months) with effect from the date of acceptance of the work and/or services. Any part found defective due to either faulty design, defective material and/or faulty workmanship during the warranty period shall be rectified/replaced free of cost by the agency. However, normal wear & tear of the parts or defects/deficiencies caused due to negligent handling and improper

maintenance of the plant and machinery by the Purchaser and damages due to natural hazards like fire, earthquake, flood etc. shall not come under the purview of the warranty.

- 24) Performance Security: Performance Security shall consist of Performance Guarantee of 10% of the contract price which shall be deducted from the payment amount, which will be refunded immediately not later than 14 days from completion of Warranty/defect liability period. Failure of the Successful Bidder to comply with the requirements as mentioned above shall constitute sufficient grounds for cancellation of the award of work and the Bidder can be disqualified from bidding for any Contract with DPA for a period of three years from the date of notification.
- 25) Packing Charges, Freight & Insurance: shall be inclusive of the amount till Sir T Hospital, Bhavnagar site.
- 26) Inspection: The work shall be inspected by Third Party Agency appointed by DPA at site, and, cost of the TPI shall be borne by DPA. Inspection Procedure for such inspection by DPA's authorized representative(s) shall be mutually settled immediately after the Contract becoming effective.
- 27) Force Majeure shall be restricted to Act of God.
- 28) Liquidated Damage Clause: In case of delay in completion of the complete system as per the prescribed period mentioned in the work-order, liquidated damages (LD) may be levied at the rate of 1/2% of the work-order value per week of delay or part thereof, subject to maximum of 10% of the work-order price. The employer, if not satisfied with the progress of the contract and in the event of failure of the contractor to recoup the delays in the mutually agreed time frame, shall be entitled to terminate the contract. In the event of such termination of the contract as described, the employer shall be entitled to recover LD up to ten percent (10%) of the work-order value and forfeit the security deposit made by the contract or besides getting the work completed by other means at the risk and cost of the contractor. In case part/portion of the work can be commissioned and part operates the portion for commercial purpose, the rate of LD will be restricted to the uncompleted value of work, the maximum LD being on the entire contract value.
- 29) All the items/materials as stated in above said work is to be shown to Engineer-In-Charge before executing the work.
- 30) The contractor has to provide all necessary tools, men, machines, ladders and tackles etc. & transportation to the site for the respective locations. DPA will not provide anything.
- 31) The Contractor shall at all times during the tenure of the work comply fully with all existing Acts, Regulations and bye laws including all statutory amendments and re-enactment of State or Central Government and other local authorities and any other enactments and Acts that may be passed in future either by the State or the Central Government or local authority.

Contractor

Sd/-
Superintending Engineer(M)
Deendayal Port Authority

Schedule – B : Price Schedule

Sub: **"Supply, installation, testing and commissioning of essential & integral components for the installed 02 nos. PSA oxygen units of 1000 LPM capacity each at Sir T Hospital Bhavnagar, donated by Deendayal Port Authority (DPA), under CSR scheme."**

Sl. No.	Description	Unit	Qty.	Rate (Rs.)	Amount (Rs.)
1	Automatic Change Over set up with Panel with Piping work along with its parts, accessories etc. as per the scope of work mentioned.	01	Lot.		
2	Voltage Stabilizer with its parts, accessories etc. as per the broad scope of work mentioned.	02	Nos.		
3	Pressure Safety Valve with its fittings, parts, accessories etc. as per the scope of work mentioned.	02	Nos.		
4	Air quality check as per the scope of work mentioned.	02	Nos.		
5	Charges for transportation, erection, testing & commissioning of the complete system.	L.S.	L.S.		
Total (Rs.)					

Total Amount in Words (excluding GST)

(Rupees _____ Only)

GST: _____ % extra.

Note:

1. The rates to be quoted shall be inclusive of all charges, taxes, Cess, Duty etc. except GST, if any.
2. All above mentioned items in BOQ are including mobilization & demobilization complete in all respects and ready to use as per approved designs, drawings and specifications including installation, testing, inspection, commissioning, defect rectifications.
3. The scope of work specified in the document are Tentative only requirements. Any piece of unit or equipment not specifically mentioned in the scope of work, but required as per guidelines for medical oxygen supply shall be provided by the contractor at no extra cost and shall be deemed to have been specified.
4. Contractor has to visit the site for actual quantification of the proposed job and quantum of the job.
5. Contractor shall carry out site visit for complete understanding of the scope of work.

Contractor

Sd/-
Superintending Engineer(M)
Deendayal Port Authority