

**MINISTRY OF EXTERNAL AFFAIRS
(GOVT. OF INDIA)**

**DISTRICT GENERAL HOSPITAL, DIKOYA
SRILANKA**

E-Tender

for

**Installation, Testing & Commissioning of already supplied
Equipment and pipeline of Medical Gas Manifold System including
supply & installation of AGSS and Electrical Distribution Panel on
Turnkey Basis at District General Hospital, Dikoya, Sri Lanka.**

VOLUME – II

GENERAL INSTRUCTION TO BIDDERS,

**CONDITIONS OF CONTRACT
&
TECHNICAL SPECIFICATION**

September 2015



(Consultants & Engineers for Mega Hospitals & Laboratories)
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Tender No. HSCC/SES/MEA/SriLanka/MGMS/2015

SECTION I: INSTRUCTIONS TO BIDDERS

A. General

1.0 Scope of work:

1.1.1 **MEA through HSCC (India) Ltd. invites bids for the Installation, Testing & Commissioning of already supplied Equipment and pipelines of Medical Gas Manifold System including supply and installation of AGSS and Electrical Distribution Panel on Turnkey Basis at District General Hospital, Dikoya, Sri Lanka.**

1.2 The successful bidder will be expected to complete the works within **2 (Months)** from Consultant's order to commence the Work.

2.0 The Employer:

Ministry of External Affairs (MEA), New Delhi represented by their consultant M/s HSCC (India) Limited (HSCC), A Government of India Enterprise, having its Corporate office at plot No. 6(A), Block-E, Sector -1, Noida, Distt. Gautam Budh Nagar (UP) will enter into the agreement with the chosen contractor for & on behalf of the Employer.

2.1 In these documents wherever the word tender / tenderer / tendering has been used, the same shall be considered synonymous with bid/bidder/bidding.

3.0 Information to be submitted:

3.1 All bidders shall include the following information and documents with their bids:

1. A work plan clearly bringing out how the bidder proposes to carry out the work to achieve the time schedule.

4.0 Cost of bidding:

The bidder shall bear all costs associated with the preparation and submission of his bid, and the Employer will in no case be responsible or liable for those costs.

5.0 Site visit:

The bidder is advised to visit and examine the Site of Works and its surroundings and obtain for himself on his own responsibility and at his own risk all information that may be necessary for preparing the bid and entering into a contract for the works as detailed in the Scope of work. The cost of visiting the Site shall be at the bidder's own expense.

B. Bidding Documents

6.0 Content of bidding documents:

The set of bidding documents comprises the documents listed below:

Volume-I : Pre-Qualification Criteria
Volume-II : Conditions of contract & Technical specifications
Volume-III : Bill of Quantities

7.0 Clarification of bidding documents:

A prospective bidder requiring any clarification of the bidding documents may notify the Employer in writing or by cable (hereinafter, "cable" includes facsimile) at the Engineer's address indicated in the Invitation to Bid. The Engineer will respond to any request for clarification which he received earlier than 7 days prior to the submission of bid. Copies of the Engineer's response will be forwarded to all purchasers of the bidding documents, including a description of the enquiry but without identifying its source.

8.0 Amendment of bidding Documents:

- 8.1 Before the deadline for submission of bids, the Engineer may modify the bidding documents by issuing addenda.
- 8.2 Any addendum thus issued shall be part of the bidding documents and shall be communicated in writing or by cable to all purchasers of the bidding documents.
- 8.3 To give prospective bidders reasonable time to take an addendum into account in preparing their bids, the Engineer shall extend as necessary, the deadline for submission of bids in accordance with Sub-Clause 16.2.

C. Preparation of Bids

9.0 Language of bid:

All documents relating to the bid shall be in English Language only.

10.0 Documents comprising the bid:

The bid submitted by the bidder on line shall comprise the following:

- (a) Bid Security
- (b) All information and document regarding the pre-qualification
- (c) Conditions of Contract
- (d) Specifications
- (e) Bill of Quantities
- (f) Tender drawings, if any
- (g) Documents mentioned in 3.1 above

and any other documents required to be completed and submitted by bidders in accordance with these instructions.

11.0 Bid prices:

- 11.1 The bidder shall fill the rates in Rupees against each item of BOQ both in words and figures. All duties, taxes, and other levies payable by the Contractor under the Contract, or for any other cause shall be included in the rates, prices, and total amount of bid submitted by the bidder. The evaluation and comparison of bids by the Employer shall be made accordingly.
- 11.3 The rates and prices quoted by the bidder shall be fixed for the duration of the Contract and shall not be subject to adjustment on any account.

12.0 Currencies of bid and payment:

The rate to be quoted by the bidder shall be in Indian Rupees.

13.0 Bid validity:

- 13.1 Bids shall remain valid for a period of 120 days after the deadline for bid submission specified in Clause 16.

13.2 In exceptional circumstances, the bidders may be requested to extend the period of validity for a specified additional period. The request and the bidders' responses shall be made in writing or by cable. A bidder may refuse the request without forfeiting his bid security. A bidder agreeing to the request will not be required or permitted to modify his bid, but will be required to extend the validity of his bid security for the period of the extension, and in compliance with Clause 14 in all respects.

14.0 Bid security:

14.1 The bidder shall furnish, as part of his bid, a security amount of Rs. 58,000/-.

14.2 The bid security and cost of document shall be in the form of a Pay order/ Demand Draft/Bank Guarantee from a Nationalized/Scheduled bank in favour of Pay & Account Officer, Ministry of External Affairs, New Delhi payable at Delhi/Noida as per Annexure-C.

14.3 Any bid not accompanied by an acceptable bid security shall be rejected.

14.4 The bid security of unsuccessful bidders will be returned within 28 days of the end of the bid validity period specified in Sub-Clause 13.1.

14.5 The bid security of the successful bidder will be discharged when the bidder has signed the Agreement and furnished the required performance security.

14.6 The bid security will be forfeited:

- (a) if the bidder withdraws his bid during the period of bid validity;
- (b) if the bidder does not accept the correction of his bid price, pursuant to Clause 23; or
- (c) in the case of a successful bidder, if he fails within the specified time limit to :
 - (i) sign the Agreement ; or
 - (ii) furnish the required performance security.

14.7 No interest will be payable on the bid security amount cited above.

15.0 Sealing, Marking & Submission

15.1 The bid shall be submitted online along with documents and mode of submission mentioned in **Check-List at Annexure-VII**, Page no. 19 & 20 at **Volume-I** of tender document.

(a) **Technical Package Part- I** : Shall Comprise the following:-

- (i) Original in sealed envelope and copy online non refundable Demand Draft of Rs.1,000/- (Tender Fee)
- (ii) Original in separate sealed envelope and copy on line Bid Security/ EMD

(b) **Technical Package Part- II** :: Shall Comprise the documents listed at checklist Annexure-VII of Vol-I and the following:-

- (a) Letter of Application
- (b) Digital Signature Certificate (DSC) from one of the authorized Certifying Authorities.
- (b) Original Bid documents (all pages) (Volume I & II) duly authenticated by digital signature.
- (c) Documents regarding constitution of Bidder as indicated in Clause 2.1 of these Instructions to Bidders.

- (d) Certificate of Registration.
 - (e) S/I/T/C Schedule and Schedule for man power to be deployed at Site.
 - (g) Turn Key work Schedule, **PERT Chart** and Schedule for manpower to be deployed at Site.
- (c) **Financial Package** : Shall be submitted online only. Shall contain only the Bill of Quantities and rates/prices (Volume-III) duly filled and signed digitally without any conditions whatsoever. Bids containing any conditions in Financial Package are liable to be summarily rejected.

The Contractor must fill up price against each item of BOQ (Volume III) both in words and figures in the blank spaces provided in the respective columns.

Please note that the price should not be indicated in any of the documents submitted except Financial bid (Price bid). Non-compliance shall entail rejection of the Bid. Any addition, modification, alteration etc if observed in any of the bid documents containing volume -I to II at any stage the bid shall be summarily rejected.

16.0 Deadline for Submission of Bids

- 16.1 Bids must be received on line as per checklist Annexure-VII , on or before **of the designated date & time.**
- 16.2 The Engineer may extend the deadline for submission of bids by issuing an amendment in accordance with Clause 8, in which case all rights and obligations of the Employer and the bidders previously subject to the original deadline will then be subject to the new deadline.

17.0 Late bids:

Any bid received by the Engineer after the deadline prescribed in Clause 16.0 will be returned unopened to the bidder.

18.0 Modification and withdrawal of bids:

- 18.1 The bidder may modify or withdraw his bid by giving notice in writing before the deadline prescribed in Clause 16.
- 18.2 The bidder's modification or withdrawal notice shall be prepared, sealed, marked, and delivered in accordance with Clause 15, with the outer and inner envelopes additionally marked "MODIFICATION" or "WITHDRAWAL", as appropriate.
- 18.3 No bid may be modified after the deadline for submission of bids.
- 18.4 Withdrawal of bid between the deadline for submission of bids and the expiration of the original period of bid validity specified in the Form of Bid may result in the forfeiture of the bid security pursuant to Clause 14.

D. Tender Opening and Evaluation

19.0 Bid opening:

- 19.1 Bids shall then be opened in the office of HSCC (I) Ltd., at Plot - 6 (A), Block - E, Sector - I, Noida, Uttar Pradesh - 201 301, half an hour after the prescribed time for Bid

submission in presence of the Bidders' representatives who may wish to be present.

Technical Package Part - I : Shall be opened first. If the Bid Security & tender document fee is not found as prescribed, the Bid shall be summarily rejected.

Technical Package Part - II : Shall be opened next. Bids of parties who do not accept the conditions laid above in the Bid documents are also liable to be rejected.

- 19.2 The Engineer will examine the bids to determine whether they are complete, whether the requisite bid securities have been furnished, whether the bids have been properly signed and whether the bids are generally in order.
- 19.3 Telegraphic/ fax offer will be treated as defective/ invalid and rejected. Only detailed complete bids received prior to the closing time and date will be taken as valid.
- 19.4 The Bidder's names, general technical details, the presence of the requisite Bid Security and such other details as the Engineer, at his discretion may consider appropriate will be announced at the Bid opening.

Financial Package : Shall contain the price Bid (volume-III). Whose bid is found to be generally in order and substantially responsive shall be opened either at the Bid opening or at a subsequent date to be intimated in advance to such eligible Bidders.

- 19.5 The bidder should quote **cost of CMC in the Price Bid and the rate of CMC will be added for evaluation and ranking purpose.**

- 19.6 The bid of any bidder who has not complied with any of the instructions contained herein may not be considered.

20.0 Process to be confidential:

- 20.1 Information relating to the examination, clarification, evaluation, and comparison of bids and recommendations for the award of a contract shall not be disclosed to bidders or any other persons not officially concerned with such process until the award to the successful bidder has been announced. Any effort by a bidder to influence the Engineer's processing of bids or award decisions may result in the rejection of his bid.

21.1 Clarification of bids:

- 21.1 To assist in the examination, evaluation, and comparison of bids, the Engineer may, at his discretion, ask any bidder for clarification of his bid, including break down of unit rates. The request for clarification and the response shall be in writing or by cable, but no change in the price or substance of the bid shall be sought, offered, or permitted except as required to confirm the correction of arithmetic errors discovered by the Engineer in the evaluation of the bids in accordance with Clause 23.

22.0 Examination of bids and determination of responsiveness:

- 22.1 Prior to the detailed evaluation of bids, the Engineer will determine whether each bid (a) meets the eligibility criteria; (b) has been properly signed; (c) is accompanied by the required securities; (d) is substantially responsive to the requirements of the bidding documents; and (e) provides any clarification and/or substantiation that the Engineer may require.
- 22.2 A substantially responsive bid is one which conforms to all the terms, conditions, and specifications of the bidding documents, without material deviation or reservation. A material deviation or reservation is one (a) which affects in any substantial way the scope, quality, or performance of the Works; (b) which limits in any substantial way, inconsistent with the bidding documents, the Engineer's right or the bidder's obligations under the contract or (c) whose rectification would affect unfairly the competitive position of other bidders presenting substantially

responsive bids.

- 22.3 If a bid is not substantially responsive, it will be rejected by the Engineer, and may not subsequently be made responsive by correction or withdrawal of the nonconforming deviation or reservation.

23.0 Correction of errors:

- 23.1 Bids determined to be substantially responsive will be checked by the Engineer for any arithmetic errors. Errors will be corrected by the Engineer as follows :

- (a) Where there is a discrepancy between the amounts in figures and in words, the amount in words will govern; and
- (b) If the bidder does not accept the corrected amount of bid, his bid will be rejected, and the bid security may be forfeited in accordance with Sub-Clause 14. 6(b).

24.0 Currency for bid evaluation:

Bids shall be evaluated as quoted in Indian Rupees in accordance with Clause 12.

25.0 Evaluation and comparison of bids:

- 25.1 The Engineer will evaluate and compare only the bids determined to be substantially responsive in accordance with Clause 22.
- 25.2 In evaluating the bids, the Engineer will determine for each bid the Evaluated Bid Price by adjusting the Bid Price after making any correction for errors pursuant to Clause 23.

E. Award of Contract

26.0 Award Criteria:

- 26.1 Subject to Clause 27, the Engineer on behalf of the Employer intends to award the Contract to the bidder whose bid has been determined to be substantially responsive to the bidding documents and who has offered the Lowest Evaluated Bid Price.

27.0 Employer's right to accept any bid and to reject any or all bids:

- 27.1 Notwithstanding Clause 26, the Engineer on behalf of the Employer reserves the right to accept or reject any bid, and to cancel the bidding process and reject all bids, at any time prior to the award of contract, without thereby incurring any liability to the affected bidder or bidders or any obligation to inform the affected bidder or bidders of the ground for the Employer's action.

28.0 Notification of award:

- 28.1 Prior to expiration of the period of bid validity prescribed, the Engineer on behalf of the Employer will notify the successful bidder by cable confirmed by registered post /courier letter that his bid has been accepted. This letter (hereinafter and in the Conditions of Contract called the "Letter of Acceptance") shall name the estimated sum which the Employer will pay the Contractor in consideration of the execution, completion, and maintenance of the Works by the Contractor as prescribed by the Contract (hereinafter and in the Contract called the "Contract Price").
- 28.2 The notification of award will constitute the formation of the Contract, subject only to the furnishing of a performance security in accordance with the provision of Clause 29.
- 28.3 Upon furnishing by the successful bidder of a performance security, the Engineer on behalf of the Employer will promptly notify the other bidders that their bids have been unsuccessful.

29.0 Performance Security:

- 29.1 Within 15 days of receipt of the notification of award from the Engineer on behalf of the Employer, the successful bidder shall furnish to the Employer a performance security in the form of a bank guarantee for an amount equivalent to 10% of the Contract Price. The performance security shall be valid till the successful completion of the Defect Liability Period by the Contractor.
- 29.2 Failure of the successful bidder to comply with the requirements of Sub-Clause 29.1 shall constitute sufficient grounds for cancellation of the award and forfeiture of the bid security.

Section II. Conditions of Contract

A. General

1.0 Definitions:

1.1 Terms which are defined in the Contract Data are not defined in the Conditions of Contract but keep their defined meanings. Capital initials are used to identify defined terms.

Acceptance is the date when the Contract came into existence upon receipt by the Contractor of the Letter of Acceptance issued by the Engineer on behalf of the Employer.

The Activity Schedule is a schedule of the activities comprising the construction, installation, testing, and commissioning of the Works.

The Completion Date is the date when the Engineer notifies that the works can be used by the Employer.

The Consultant is M/s. HSCC (I) Ltd. (HSCC).

The Contract is the contract between the Employer of the one part and the Contractor of the other.

The Contract Data defines the documents and other information which comprise the Contract.

The Contractor is a person or corporate body whose bid to carry out the Works has been accepted by the Employer.

The Contractor's Bid is the completed bidding document submitted by the Contractor to the Employer.

The Contract Price is the price stated in the Letter of Acceptance and thereafter as adjusted in accordance with the provisions of the Contract.

Days are calendar days; months are calendar months.

A Defect is any part of the Works not completed in accordance with the Contract.

The Engineer is the person named in the Contract Data who is responsible for supervising the Contractor, administering the Contract, certifying payments due to the Contractor, issuing and valuing Variations to the Contract, awarding extensions of time etc.

Equipment is the Contractor's machinery and vehicles brought temporarily to the Site to construct the Works.

The Initial Contract Price is the Contract Price at the date of the Employer's written acceptance of the Contractor's Bid.

The Intended Completion Date is the date on which it is intended that the Contractor shall complete the Works. The Intended Completion Date is specified in the Contract Data. The Intended Completion Date may be revised only by the Engineer by issuing an Extension of time.

Plant is any integral part of the Works which is to have a mechanical, electrical, electronic or chemical function.

The Site is the area defined as such in the Contract Data.

The Start Date is given in the Contract Data. It is the date when the Contractor can commence work on the Contract.

It does not necessarily coincide with any of the Site Possession Dates.

A Subcontractor is person or corporate body who has a contract with the Contractor to carry out a part of the work in the Contract.

Temporary Works are works designed, constructed, installed, and removed by the Contractor which are needed for construction or installation of the Works.

A Variation is an instruction given by the Engineer which varies the Works.

The Works are what the Contract requires the Contractor to construct, install, and hand over to the Employer.

2.0 Interpretation:

In interpreting these Conditions of Contract, singular also means plural, male also means female, and vice versa. Headings and cross-references between clauses have no significance. Words have their normal meaning under the language of the Contract unless specifically defined.

3.0 Language and law:

The language of the Contract and the law governing the Contract are stated in the Contract Data.

4.0 Engineer's decisions:

The Engineer is to decide contractual matters between the Employer and the Contractor fairly and impartially.

5.0 Delegation:

The Engineer may delegate any of his duties and responsibilities to other people after notifying the Contractor and may cancel any delegation after notifying the Contractor.

6.0 Communications:

Communications between parties which are referred to in the conditions are effective only when in writing.

7.0 Sub-Contracting: Deleted

8.0 Other Contractors:

Deleted

9.0 Personnel:

Deleted

10.0 Removal of personnel:

If the Engineer asks the Contractor to remove a person who is a member of his staff or his work force and states his reasons the Contractor is to ensure that the person leaves the Site within seven days and has no further connection with the work in the Contract.

11.0 Contractor's risks:

11.1 All risks of loss of or damage to MEA/District General Hospital, Dikoys, Sri Lanka and of personal injury and death which arise during and in consequence of the performance of the Contract other than the excepted risks are the responsibility of the Contractor.

Excepted Risks are:

- a.
 - (i) war, hostilities (whether war be declared or not), invasion, act of foreign enemies,
 - (ii) Rebellion, revolution, insurrection, or military or usurped power, or civil war,
 - (iii) ionizing radiations, or contamination by radio - activity from any nuclear fuel, or from any nuclear waste from the combustion of nuclear fuel, radio - active toxic explosive, or other hazardous properties of any explosive nuclear assembly or nuclear component thereof,
 - (iv) pressure waves caused by aircraft or other aerial devices travelling at sonic or supersonic speed,
- b. loss or damage due to the use or occupation by the Employer of any section or part of the Permanent Works, except as may be provided for in the Contract.
- c. loss or damage to the extent that it is due to the design of the Works, other than any part of the design provided by the Contractor or for which the Contractor is responsible.

12.0 Insurance:

- 12.1 The following insurance cover **110%** is to be provided by the Contractor in the joint names of the Employer and the Contractor for the period from the Start Date to the end of the Defects Notice Period or of the last Defects Correction Period whichever is later:
 - (a) cover against damage to other people's property caused by the Contractor's acts or omissions;
 - (b) cover against death or injury caused by the Contractor's acts or omissions to
 - (i) anyone authorized to be on the Site ;
 - (ii) third parties who are not on the Site ;
 - (c) cover against damage to the Works and materials during construction.
- 12.2 Policies and certificates for insurance are to be produced by the Contractor to the Engineer for approval before the Start Date given in the Contract Data and subsequently as the Engineer may require.
- 12.3 If the Contractor does not produce any of the policies and certificates required, the Employer may affect the insurance for which the Contractor should have produced the policies and certificates and recover the premiums it has paid from payments due to the Contractor.
- 12.4 Alterations to the terms of insurance may be made either with the approval of the Engineer or as a result of general changes imposed by the insurance company with which the insurance policy is affected.
- 12.5 Both parties are to comply with conditions of the insurance policies.

13.0 Indemnities:

- 13.1 The Contractor is liable for and indemnifies the Employer against losses, expenses and claims for loss or damage to MEA/ District General Hospital, Dikoya Sri Lanka property, personal injury, and death caused by his own acts or omissions.
- 13.2 The Contractor indemnifies the Employer against claims for damage caused by the movement of his Equipment or Temporary Works outside the Site.

14.0 Site Investigation report:

Deleted

15.0 Queries about the contract data:

The Engineer is to give instructions clarifying queries about the Contract Data.

16.0 Contractor to execute the works:

1.1.2 The Contractor is to execute the work of **Installation, Testing & Commissioning of already supplied Equipment and pipelines of Medical Gas Manifold System including Supply & Installation of AGSS, Electrical Distribution Panel on Turnkey Basis at District General Hospital, Dikoya, Sri Lanka** in accordance with the Specification and contract. The complete work required for installation viz. cement concrete foundation and vibration isolation techniques required for all rotary/stationary equipment, electrical cabling required etc. ,are within the scope of bidder and nothing extra shall be paid to the successful bidder.

17.0 The works to be completed by the intended completion date:

The Contractor may begin the Works on the Start Date and is to carry out the Works in accordance with the program submitted by him, as updated with the approval of the Engineer, and complete them by the Intended Completion Date.

18.0 Approval of samples shall be taken by the contractor prior to their delivery at site.

19.0 Safety:

The Contractor is responsible for the safety of all activities on the Site.

20.0 Discoveries:

Deleted

21.0 Possession of the site:

The Employer is to give possession of all parts of the Site to the Contractor, where the work is required to be executed. If possession of a part is not given by the date stated in the Contract Data, the Employer is deemed to have delayed the start of the relevant activities.

22.0 Access to the site:

The Contractor is to allow the Engineer and any person authorized by the Engineer access to the Site and to any place where work in connection with the Contract is being carried out or is intended to be carried out.

23.0 Instructions:

The Contractor shall carry out all instructions of the Engineer.

24.0 Procedure for disputes:

If any dispute or difference of any kind what so ever shall arise between the Employer and the contractor or the Engineer and the contractor in connection with or arising out of the Contract, or the execution of the works, whether during the progress of the works or after their completion and whether before or after the termination, abandonment or breach of the contract, it shall, in the first place, be referred to and settled by the Engineer who shall, within a period of ninety days after being requested by either party to do so, give written notice of his decision to the Employer and the Contractor. Subject to arbitration, as hereinafter provided, such decision in respect of every matter so referred shall be final and binding upon the Employer and the Contractor and shall forthwith be given effect to by the Employer and by the Contractor, who shall proceed with the execution of the works with due diligence whether he or the Employer requires arbitration or not. If the Engineer has given written notice of his decision to the Employer and the Contractor and no claim to arbitration has been communicated to him by either the Employer or the Contractor within a period of ninety days from receipt of such notice, the said decision shall remain final and binding upon the Employer and the Contractor. If the Engineer shall fail to give notice of his decision, as aforesaid within a period of ninety days after being requested, or if either the Employer or the Contractor be dissatisfied with any such decision, then and in any such case

either the Employer or the Contractor may within ninety days after receiving notice of such decision or within ninety days after the expiration of the first named period of ninety days as the case may be require that the matter or matters in dispute be referred to arbitration as hereinafter provided. All disputes or differences in respect of which the decision if any of the Engineer has not become final and binding as aforesaid, shall be finally settled under the Indian Arbitration and Conciliation Act, 1996 or any statutory modification or re - enactment thereof and the rules made there under and for the time being in force shall apply to the arbitration proceedings under this clause. Such arbitration shall be settled by Sole arbitrator who shall be appointed by Chairman cum Managing Director, HSCC. The arbitration shall take place in New Delhi unless both parties agree otherwise. Neither party shall be limited in the proceedings before the arbitrator to the evidence nor did arguments put before the Engineer for the purpose of obtaining his said decision. No decision given by the Engineer in accordance with the foregoing provisions shall disqualify him from being called as a witness and giving evidence before the arbitrator on any matter whatsoever relevant to the dispute or difference referred to the arbitrator as aforesaid. The reference to arbitration may proceed notwithstanding that the works shall not then be or be alleged to be complete provided always that the obligations of the Employer, the Engineer and the Contractor shall not be altered by reason of the arbitration being conducted during the progress of the works.

B. Time Control

25.0 Program:

- 25.1 Within the time stated in the Contract Data, the Contractor shall submit to the Engineer for his approval a program showing the general methods, arrangements, order, and timing for all the activities in the Works.
- 25.2 The Contractor is to submit to the Engineer an updated program as required by the Engineer.
- 25.3 The Engineer's approval of the program does not alter the Contractor's obligations. The Contractor may revise the program and submit it to the Engineer again at any time. A revised program is to show the effect of Variations.

26.0 Extension of the intended completion date:

- 26.1 The Engineer is to extend the Intended Completion Date if an event not attributable to the contractor causing delay occurs or a Variation is issued which makes it impossible for completion to be achieved by the Intended Completion Date.
- 26.2 The Engineer is to decide whether and by how much to extend the Intended Completion Date within 21 days of the Contractor asking him to decide upon the effect of a event causing delay or Variation and submitting full supporting information. If the Contractor has failed to give early warning of a delay or has failed to cooperate in dealing with a delay, the delay by his failure is not considered in assessing the new Intended Completion Date.

27.0 Acceleration:

Deleted

28.0 Delays ordered by the Engineer:

The Engineer may instruct the Contractor to delay the start or progress of any activity within the Works.

29.0 Management meetings:

- 29.1 The Engineer and/ the Contractor may be required the other to attend a management meeting. The business of a management meeting is to review the plans for remaining work and to deal with matters raised in accordance with the early warning procedure.

C. Quality Control

30.0 Identifying defects:

The Engineer is to check the Contractor's work and to notify the Contractor of any Defects which he finds. Such checking does not affect the Contractor's responsibilities. The Engineer may instruct the Contractor to search for a Defect and to uncover and test any work which he considers may have a Defect.

31 & 32.0 Inspection & Tests:

Inspection and Tests of all equipment will be carried out before supply to the site for the items to be supplied in the said tender and for other plumbing, electrical and masonry work as per the relevant BIS at site. In case it is not available in BIS the same shall be carried out as per decision given by engineer based on existing general practice which will be binding to the agency. The material which is not passing to BIS or any other test will be rejected or may be accepted with reduced rates as per decision taken by engineer. The contractor should provide Third Party certificate Saying as "certify that the equipment inspected meet tender specification" from TUV/SGS/Lloyd of the imported equipment along with delivery of the same to the site.

33.0 Warranty

- 33.1 The contractor warrants that the goods supplied under the contract is new, unused and incorporated all recent improvements in design and materials unless prescribed otherwise by the purchaser in the contract. The contractor further warrants that the goods supplied under the contract shall have no defect arising from design, materials or workmanship or from any act or omission of the contractor that may develop under normal use of the supplied goods under the conditions prevailing in India.
- 33.2 This warranty shall remain valid for **Twelve (12) months** after the goods or any portion thereof as the case may be, have been delivered to the final destination and installed and commissioned at the final destination and accepted by the purchaser in terms of the contract, unless specified otherwise in the SCC.
- 33.3 In case of any claim arising out of this warranty, the purchaser / consignee shall promptly notify the same in writing to the contractor. **The contractor shall attend with 95% uptime during Warranty period of the complete system otherwise with penalty of extension of Warranty period by double the downtime period actually taken by the contractor.**
- 33.4 Upon receipt of such notice, the contractor shall, within 8 hours on a 24(hrs) x 7 days) x 365(days) basis, repair or replace the defective goods or parts thereof, free of cost, at the ultimate destination. The contractor shall take over the replaced parts / goods after providing their replacements and no claim, whatsoever shall lie on the purchaser for such replaced parts / goods thereafter.
- 33.5 In the event of any rectification of a defect or replacement of any defective goods during the warranty period, the warranty for the rectified / replaced goods shall be extended to a further period of Twelve (12) months from the date such rectified / replaced goods starts functioning to the satisfaction of the purchaser.
- 33.6 If the contractor, having been notified, fails to rectify / replace the defect(s) within 8 hours on a 24(hrs) x 7 (days) x 365 (days) basis, the purchaser may proceed to take such remedial action(s) as deemed fit by the purchaser, at the risk and expense of the contractor and without prejudice to other contractual rights and remedies, which the purchaser may have against the contractor.
- 33.7 During Warranty period, the contractor is required **to visit at each consignee/s site at once in 6 months** commencing from the date of the installation for preventive maintenance of the goods

34.0 Incorrect defects after completion date:

- 34.1 After completion the Engineer may arrange for a third party to correct a Defect if the contractor has not corrected it within the Defects Correction Period.

34.2 The Engineer is to give the Contractor at least 28 days notice of his intention to use a third party to correct a Defect. If the Contractor does not correct the Defects himself within this notice period, the Engineer may have the Defect corrected by the third party. The cost of the correction will be deducted from the Contract Price.

D. Cost Control

35.0 Bill of quantities:

35.1 The Bill of Quantities is to contain items for the work to be done by the Contractor.

35.2 The Bill of Quantities is used to calculate the Contract Price. The Contractor will be paid for the quantity of the work done at the rate in the Bill of Quantities for each item.

36.0 Changes in the quantities:

36.1 Final work done may exceed to any extent item wise as well as total work value wise, as per the requirement of the works to be executed under the contract.

36.2 If requested by the Engineer, the Contractor is to provide the Engineer with a detailed cost breakdown of any rate in the Bill of Quantities.

37.0 Variations:

37.1 All Variations are to be included in updated programs produced by the Contractor.

38.0 Payments for variations:

If the contract does not contain any rates or prices applicable to the varied work, the rates and prices in the contract shall be used as basis for valuation so far as may be reasonable, failing which, after due consultation by the engineer with the contractor, suitable rates or prices shall be agreed upon between the engineer and the contractor. In the event of disagreement, the engineer shall fix such rates or prices as are, in his opinion, appropriate based on CPWD norms and shall notify the contractor accordingly.

39.0 Cash flow forecasts:

39.1 The contractor shall provide cash flow forecast at the start of work to the Engineer. When the program is updated, the Contractor is to provide the Engineer with an updated cash flow forecast.

40.0 Payment certificates:

40.1 The contractor shall submit to the Engineer monthly statements of the value of the work completed less the cumulative amount certified previously on a printed proforma (prepared at the cost of Contractor).

40.2 The Engineer shall check the Contractor's monthly statement and certify the amount to be paid to the Contractor.

40.3 The Engineer may exclude any item certified in a previous certificate or reduce the proportion of any item previously certified in any certificate in the light of later information.

41.0 Payment

For Items to be Supplied & Installed

41.1 80% of BOQ rate shall be paid on receipt of equipment/materials & installation, testing & commissioning at Site and after inspection and verification of equipment/materials along with

third party certificate of the imported equipment and their respective documents including internal factory final inspection-cum quality report and material test reports and document in support of imported items etc. on pro-rata basis.

41.2 20% of BOQ rate shall be paid on satisfactory takeover by the employer.

For Items to be Installed

41.1 80% of BOQ rate shall be paid on installation, testing & commissioning of equipment on pro-rata basis.

41.2 20% of BOQ rate shall be paid on satisfactory takeover by the employer.

The following shall be the terms of payment for the comprehensive Maintenance services;

a) The payment shall be released quarterly as per the quoted rates for the particular year as follows :

100% - On submission of unconditional Bank guarantee of equal amount from any Nationalized/ Scheduled Bank and in the acceptable format and valid for one year (i.e. valid during the entire operation and maintenance period for the particular year).

42.0 Taxes:

Taxes shall be deducted as applicable.

43.0 Cost of Labour:

The Contractor shall be deemed to have allowed in his Tender Price for the full cost of labour having due regard to the provision of all labour legislation of the Central and State Government which are in force on the date of the tender and which are applicable to labour engaged for the Contract.

44.0 Retention Amount:

44.1 The Employer is to retain from each payment due to the contractor the proportion stated in the Contract Data until Completion of the whole of the Works.

44.2 On Completion of the whole of the Works, half the total amount retained is repaid to the Contractor and balance half when the Defects Notice Period has passed and the Engineer has certified that all Defects notified by him to the Contractor before the end of this period have been corrected. The second half of the retention may be paid against submission of Bank Guarantee approved by the Engineer from any nationalized bank if applicable.

45.0 Liquidated damages:

45.1 If the contractor fails to complete execution of works within the relevant time as specified in the Contract Data / Extended date, the contractor shall pay the employer the relevant sum as stated in the Contract Data as liquidated damages for every day or part of a day which shall elapse between the relevant time of completion and the date stated in Taking over certificate

46.0 Advance payment:

46.1 Deleted.

47.0 Securities:

47.1 The performance payment securities are to be provided to the Employer by the Start Date and are to be issued in a form and by a bank acceptable to the Employer.

- 47.2 If there is no reason to call the performance security, the performance security is to be returned by the Employer within 14 days of the last Defects Correction Period.
- 47.3 The Employer is to notify the Contractor of any claim made against the institution issuing the security.
- 47.4 The Employer may claim against the surety if any of the following occurs for 42 days or more
- (a) the Contractor is in breach of the Contract and the Employer has notified him that he is
 - (b) the Contractor has not paid an amount due to the Employer.

48.0 Day works:

- 48.1 Deleted

49.0 Cost of repairs:

Loss or damage to the Works or materials to be incorporated in the Works between the Start Date and the end of the Defects Correction periods is to be mended by the Contractor at the Contractor's cost if the loss of damage arises from the Contractor's acts or omissions.

E. Finishing the Contract

50.0 Completion:

The Engineer shall issue a certificate certifying Completion to the Contractor and the Employer when he decides that the work is completed.

51.0 Taking over:

The Employer shall take over the Works within seven days of the Engineer issuing a certificate of Completion.

52.0 Final account:

- 52.1 The Contractor shall furnish to the Engineer a detailed account of the total amount which he considers is payable to him under the Contract before the end of the Defects Notice Period. The Engineer is to certify any final payment which is due to the Contractor within 56 days of receiving the Contractor's account if it is correct and complete. If it is not, the Engineer is to issue a schedule which states the scope of the corrections or additions which are necessary. If the Final Account is still unsatisfactory after it has been resubmitted, the Engineer is to decide on the amount payable to the Contractor.

53.0 Operating and maintenance manuals:

The contractor shall submit operation and maintenance manual for the complete Medical Gas Manifold System clearly indicating the trouble shooting, the preventive maintenance to be carried out and maintenance schedule, in three sets in hard binding.

54. Remedies and Powers due to Default of Contractor:

- 54.1 If the contractor shall become bankrupt or if the Engineer shall certify in writing to the Employer that in his opinion the contractor.
- a) has abandoned the contract, or
 - b) without reasonable excuse has failed to commence the work or has suspended the progress of the works for twenty eight(28) days after receiving from the Engineer written notice to proceed, or

- c) has failed to remove materials from the Site or to pull down and replace work twenty eight(28) days after receiving from the Engineer written notice that the said materials or work had been condemned and rejected by the Engineer under these conditions, or
- d) despite previous warnings by the Engineer, in writing, is not executing the works in accordance with the contract, or is persistently or flagrantly neglecting to carry out his obligations under the Contract, or
- e) has to the detriment of good workmanship, or in defiance of the Engineer's instructions to the contrary, sublet any part of the contract, then all the events mentioned in this clause 54.1 shall for the avoidance of doubt be a breach of this contract and the Employer may, after giving fourteen(14) days notice to the contractor, enter upon the site and the works and expel the contractor there from without thereby voiding the contract, or releasing the Contractor from any of his obligations or liabilities under the contract, or affecting the rights and powers conferred on the Employer or the Engineer by the contract, and may himself complete the works or may employ any other contractor to complete the works. The Employer or such other contractor may use for such completion so much of the constructional plant, Temporary works and materials, which have been or are deemed to be reserved exclusively for the execution of works under the provisions of the contract, as he or they may think proper, and the Employer may, at any time sell any of the said constructional plant, Temporary works and unused materials and apply the proceeds of sale in or towards the satisfaction of any sums due or which may become due to him from the contractor under contract.

54.2 Valuation at date of forfeiture :

The Engineer shall as soon as may be practicable after any such entry and expulsion by the Employer, fix and determine ex-parte, or by or after reference to the parties, or such investigation or enquiries as he may think fit to make or institute, and shall certify what amount, if any, had at the time of such entry and expulsion been reasonably earned by or would reasonably accrue to the contractor in respect of work then actually done by him under the contract and the value of any of the said unused or partially used materials, any constructional plant and any Temporary works.

54.3 Payment after forfeiture:

If the Employer shall enter and expel the contractor under this clause, he shall not be liable to pay to the contractor any money on account of the contract until the expiration of the Defects Notice period and thereafter until the costs of execution and maintenance, damages for delay in completion, if any, and all other expenses incurred by the Employer have been ascertained and the amount thereof certified by the Engineer. The contractor shall then be entitled to receive only such sum or sums, if any as the Engineer may certify would have been payable to him upon due completion by him after deducting the said amount. If such amount shall exceed the sum which would have been payable to the contractor on due completion by him then the Contractor shall, upon demand pay to the Employer the amount of such excess and it shall be deemed a debt due by the contractor to the Employer and shall be recoverable accordingly.

55.0 Property:

- 55.1 All materials on the Site, Plant, and Equipment owned by the Contractor, Temporary Works and Works are deemed to be the Property of Employer and are at his disposal if the Contract is terminated because of a fundamental breach of Contract by the Contractor.

56.0 Frustration:

- 56.1 If the Contract is frustrated by the outbreak of war or by any other event entirely outside the control of either the Employer or the Contractor the Engineer is to certify that the Contract has been frustrated. The Contractor is to make the Site safe and stop work as quickly as possible after receiving this certificate and is to be paid for all work carried out before receiving it and for any work carried out afterwards to which he was committed.

- 57.0 **Comprehensive Maintenance contract (CMC):**
(MEA reserve the right for contract, placement of order and necessary payment.)
- 57.1 The purchaser / consignee reserve the rights to enter into Annual Comprehensive Maintenance Contract between Consignee and the Supplier for the period as required after the completion of Warranty period.
- 57.2 The supplier along with its Indian Agent and the CMC provider shall ensure continued supply of the spare parts for the machines and equipments supplied by them to the purchaser for 3 years after the expiry of one year warranty period.
- 57.3 The Contractor shall provide comprehensive maintenance services for the Medical Gas Manifold System **for a period of Thirty Six (36) Months after completion of warranty period** as detailed below:
- a. For the Medical Gas Manifold Manifold System along with accessories for 3 years
 - b. With labour and spares after satisfactory completion of warranty period.
 - c. The cost of CMC may be quoted along with taxes applicable on the date of tender opening.
 - d. **The bidder must quote cost of CMC in the Price Bid and the rate of CMC will be added with total cost of Medical Gas Manifold System for evaluation and ranking purpose.**
 - e. The payment of CMC will be made on quarterly basis after satisfactory completion of contract, duly certified by user.
 - f. **There will be 95% uptime during CMC period of the complete system otherwise with penalty of extension of CMC period by double the downtime period.**
- 57.4 The comprehensive maintenance services during this period shall be inclusive of all spares, accessories, manpower, tools and tackle, replacement of parts, routine servicing and maintenance of equipment/systems etc. complete in all respects. The consumables like water, electricity and detergents during this period shall be arranged and provided by the Consignee. The Contractor shall carry out all routine and special maintenance of the equipment/plant/system and attend to any defects that may arise in operation of the equipments/system and plant. Consumable items required during the maintenance, loss of which is not attributable to bad material and/or workmanship will be arranged by the Consignee without cost to Contractor.

Section- III Additional Specific Condition of Contract

1. **Installation, Testing, commissioning of already supplied Equipment and pipelines of Medical Gas Manifold System including Supply and Installation of AGSS, Electrical Distribution Panel on Turnkey Basis at District General Hospital, Dikoya, Sri Lanka.**
2. **The bidder must quote cost of CMC in the Price Bid and the rate will be added with the total cost of Medical Gas Manifold System for evaluation and ranking purpose.**
3. The bidder may collect the copy of District General Hospital, Dikoya, Sri Lanka **layout plan** and visit the site, for complete evaluation of the project before submitting the bid with due permission from HSCC Site office, at District General Hospital, Dikoya, Sri Lanka.
4. The entire project has to be done **on turnkey basis** including internal civil, water piping, plumbing and electrical works including water softening. Any minor details of construction which are obviously and fairly intended or which may not have been definitely referred to in this contract but which are usual of construction practice and essential to the work shall be included in this contract.
5. The bidder must enclose with their bids the **item wise compliance statement** for their offered equipment, system & accessories and quality standard categorically with respect to the tender specifications.
6. The selection of all equipments and system should be **as per the standard noted** in the specification.
7. Any **misinformation** regarding the specification of the equipment offered would mean outright technical **rejection**.
8. The bidder must submit **Printed catalogue** and technical data sheet to substantiate offer.
9. The bidder must submit **User list and Performance report** of similar type of work, within last 7 years from major hospital.
10. **Warranty for 1 yr** from the date of hand-over to the Employer.
11. **95% uptime warranty** during warranty period of the complete system otherwise with penalty of extension of warranty period by double the down time period
12. One year warranty as per Specific conditions of contract of the bidding document. The warranty will be for the main equipment along with accessories from the date of **satisfactory installation issued by user**
13. The bidder, in case of participating in the tender as agent, must include the **Manufacturer's Authorization** Form with the offer after getting duly filled as per Format enclosed in Special Condition of contract.
14. The bidder must have **dealership/distributorship** from the same manufacturer (whose manufactured items are offered in the bid) **at least one year** from the last day of the month previous to the one in which tender is invited.

15. The contractor must provide at least **30 days training program** to the concerned personnel on the Medical Gas Manifold System and the necessary cost for training shall be borne by the contractor.
16. The Bidder should quote all the items . The bid shall be rejected if complete items not quoted in the Price Bid of the tender.
17. The Bidder should submit the photographs in hard copy at the completion of commissioning of MGMS.

Section IV. Contract Data

Items marked "N/A" do not apply in this Contract

The following documents are also part of the Contract:

	Clause Reference (Conditions of contract)
*The Contractor's Bid and Letter of Acceptance	[1]
*The Conditions of Contract	[1]
*The Technical Specifications	
*The Program	[25]
*The Priced Bill of Quantities	[35]
The Engineer is :	Chief General Manger or any other officer nominated from time to time by CMD of HSCC (I) Ltd. Plot 6(A),Block-E, Sector-1,Noida, Distt. Gautam Budh Nagar, Uttar Pradesh-201301.
*The Start Date is as notified in the letter of Acceptance	
*The Intended Completion Date for the whole work is 2 months from Consultant's order to commence the Work.	[17]
*The Contractor is to submit the program for the works within 7 days of being notified of the acceptance of his bid.	[25]
*The contractor is to submit the updated program at the interval of 15 days	[25.3]
*The Site is located at District General Hospital, Dikoya, Sri Lanka	[1]
*The Warranty is One year	[33]
*The language of the Contract is English	[3]
*The law which applies to the Contract is the Law of the Union of India, Jurisdiction is High Court of Delhi only	[3]
*Arbitration procedure to be used shall be Arbitration and Conciliation Act 1996 or the latest amended.	[24]
*Appointing Authority for the arbitrator	[24]
*Place where arbitration will take place: New Delhi.	[24]
*The currency of the contract is the Indian Rupees.	
*The proportion of payments retained is 5%. Limited to 5% of contract value.	[44]

*The liquidated damages for the whole of the Defined work are 0.5% per week of delay. [45]

*Maximum liquidated damages shall be 10% of the Contract price. [45]

*The amounts and currencies of the Performance guarantee are [47]
Amount : 10% of Contract price

Currency: Indian Rupees

Insurance : 110% coverage (12)

FORM OF AGREEMENT

1. This Agreement made the _____ day of _____ 2013 between Ministry of External Affairs, New Delhi (hereinafter called "The Employer") represented by M/s HSCC (India) Limited, E-6(A), Sector - 1, Noida (UP) - 201301 who enters into this Agreement of the one part and M/s _____ (hereinafter called "the Contractor") of the other part.

1.1 Whereas the Employer is desirous that certain Works should be executed by the Contractor, viz supply, installation, testing and commissioning of **Medical Gas Manifold System at District General Hospital, Dikoya, Sri Lanka** and has accepted a bid by the Contractor for the execution and completion of such Works and the remedying of any defects therein.

Now this Agreement witnesseth of follows:

1. In this Agreement words and expressions shall have the same meanings as are respectively assigned to them in the Conditions of Contract hereinafter referred to.
2. The following documents shall be deemed to form and be read and construed as part of this Agreement, viz :
 - (a) The Letter of Acceptance ;
 - (b) The said bid ;
 - (c) The Conditions of Contract ;
 - (d) The Specification ;
 - (e) The Drawings ;
 - (f) The Priced Bill of Quantities ;
 - (g) Any other relevant documents referred to this Agreement or in the aforementioned documents
3. In consideration of the payments to be made by the Employer to the Contractor as herein after mentioned, the Contractor hereby covenants with the Employer to execute and complete the Works and remedy any defects therein in conformity in all respects with the provisions of the Contract.
4. The Employer hereby covenants to pay the Contractor in consideration of the execution and completion of the Works and the remedying of defects therein the Contract Price or only such sum as may become payable under the provisions of the Contract at the times and in the manner prescribed by the Contract.

In Witness whereof, the parties hereto have caused this Agreement to be executed the day and year first before written.

Signed, Sealed, and Delivered by the Said _____

Binding Signature of Ministry of External Affairs (MEA), New Delhi

Binding Signature of Contractor _____

in the presence of

Witness (1) :

Witness (2) :

**PROFORMA FOR PERFORMANCE BANK GUARANTEE
(On a stamp paper of appropriate value from any Nationalized Bank or Scheduled Bank)**

To,

Pay & Accounts Officer,
Ministry of External Affairs,
New Delhi

Dear Sir,

In consideration of the Ministry of External Affairs, New Delhi (hereinafter called Employer) which expression shall include his successor and assigns represented by his Consultant M/s. HSCC (I) Ltd., Plot - 6 (A), Block - E, Sector - I, Noida, Uttar Pradesh - 201301 (hereinafter called HSCC) having awarded to M/s _____ (hereinafter referred to as the said Contractor or 'Contractor' which expression shall whenever the subject to context so permits include its successors and assigns) a contract No. _____ in terms inter alia, of the HSCC Letter No. _____ dated _____ and the General Conditions of Contract and upon the condition of the contractor's furnishing security for the performance of the contractor's obligations and discharge of the contractor's liability under and in connection with the said contract upto a sum of Rs. _____ (Rupees _____ only) amounting to **10% (Ten percent)** of the total contract value.

1. We, _____ (hereinafter called 'The Bank' which expression shall include its successors and assigns) having our branch office at _____ and Registered/Head Office at _____ a company registered under the Companies Act, 1956) hereby jointly and severally undertake to guarantee the payment to the Employer in rupees forthwith on demand in writing and without protest or demur or any and all moneys any wise payable by the contractor to the Employer under in respect of or in connection with the said contract inclusive of all the Employer's losses and damages and costs, (inclusive between attorney and client) charges and expenses and other moneys any wise payable in respect of the above as specified in any notice of demand made by the Employer to the Bank with reference to this guarantee upto an aggregate limit of Rs. _____ (Rupees _____ only).
2. We _____ Bank Ltd. further agree that The Employer shall be sole judge of and as to whether the said contractor has committed any breach or breaches of any of the terms and conditions of the said contract and the extent of loss, damage, cost, charges and expenses caused to or suffered by or that may be caused to or suffered by The Employer/ HSCC on account thereof and the decision of The Employer that the said Contractor has committed such breach or breaches and as to the amount or amounts of loss, damage, costs, charges and expenses caused to or suffered by The Employer from time to time shall be final and binding on us.
3. The Employer shall be at liberty without reference to the Bank and without affecting the full liability of the Bank hereunder to take any other security in respect of the Contractor's obligations and liabilities hereunder or to vary the contract or the work to be done thereunder vis-a-vis the Contractor or to grant time or indulgence to the Contractor or to reduce or to increase or otherwise vary the prices of the total contract value or to release or to forbear from enforcement of all or any of the security and/or any other security(ies) now or hereafter held by The Employer and no such dealing(s) reduction(s) increase(s) or other indulgence(s) or arrangements with the Contractor or release or forbearance whatsoever shall absolve the bank of the full liability to The Employer hereunder or prejudice the rights of The Employer against the bank.

4. This guarantee shall not be determined or affected by the liquidation or winding up, dissolution, or change of constitution or insolvency of the Contractor but shall in all respects and for all purposes be binding and operative until payment of all monies payable to The Employer in terms thereof.
5. The bank hereby waives all rights at any time inconsistent with the terms of this guarantee and the obligations of the Bank in terms hereof shall not be any wise affected or suspended by reason of any dispute or disputes having been raised by the Contractor stopping or preventing or purporting to stop or prevent any payment by the Bank to The Employer in terms hereof.
6. The amount stated in any notice of demand addressed by The Employer to the Bank as liable to be paid to The Employer by the Contractor or as suffered or incurred by The Employer on account of any losses or damages or costs, charges and/or expenses shall be conclusive evidence of the amount so liable to be paid to The Employer or suffered or incurred by The Employer as the case may be and shall be payable by the Bank to The Employer in terms hereof.
7. This guarantee shall be a continuing guarantee and shall remain valid and irrevocable for all claims of The Employer and liabilities of the contractor arising up to and until midnight of _____.
8. This guarantee shall be in addition to any other guarantee or security whatsoever that The Employer may now or at any time any wise may have in relation to the Contractor's obligations/or liabilities under and/or in connection with the said contract, and The Employer shall have full authority to have recourse to or enforce this security in preference to any other guarantee or security which The Employer may have or obtain and no forbearance on the part of The Employer in enforcing or requiring enforcement of any other security shall have the effect of releasing the Bank from its full liability hereunder.
9. It shall not be necessary for The Employer to proceed against the said Contractor before proceeding against the Bank and the Guarantee herein contained shall be enforceable against the Bank notwithstanding that any security which The Employer may have obtained or obtain from the contractor shall at the time when proceedings are taken against the said bank hereunder be outstanding or unrealised.
10. We, the said Bank undertake not to revoke this guarantee during its currency except with the consent of The Employer in writing and agree that any change in the constitution of the said contractor or the said bank shall not discharge our liability hereunder.
11. We _____ the said Bank further that we shall pay forthwith the amount stated in the notice of demand notwithstanding any dispute/difference pending between the parties before the arbitrator and/or that any dispute is being referred to arbitration.
12. Notwithstanding anything contained herein above, our liability under this guarantee shall be restricted to Rs. _____ (Rupees _____) and this guarantee shall remain in force till _____ and unless a claim is made on us within 3 months from that date, that is before _____ all the claims under this guarantee shall be forfeited and we shall be relieved of and discharged from our liabilities thereunder.

Dated _____ day of _____ 2015.

For and on behalf of Bank.

Issued under seal :

**PROFORMA FOR BID SECURITY BANK GUARANTEE
(To cover payment of Bid Security & Conditions of Contract)**

(On a stamp paper of appropriate value from any Nationalized Bank or Scheduled Bank)

To,

Pay & Accounts Officer,
Ministry of External Affairs,
New Delhi

Dear Sir,

In consideration of your agreeing to accept Bank Guarantee for Rs. ----- (Rupees -----
-----) in lieu of payment from M/s. having their registered
office at (thereinafter called the Bidder) towards bid security in respect
of your Tender No. Calling for tender foratand
for due fulfillment of the terms & conditions of the said tender, we hereby undertake and agree to
indemnify and keep you indemnified to the extent of Rs..... (Rupees).

In the event of any loss or damages, costs, charges or expenses caused to or suffered by you by
reason of any breach or non-observance on the part of the bidder of any terms & conditions of
the said tender, we shall on demand and without cavil or argument and without reference to the
bidder, irrevocably and unconditionally pay you in full satisfaction of your demand the amounts
claimed by you, provided that our liability under this guarantee shall not at any time exceed
Rs.....

This guarantee herein contained shall remain in full force and till you finalize the tender and select
the tender as per your choice and it shall in the event of the said bidder being selected and
entrusted with the said work, continue to be enforceable till the said bidder executes the
Agreement with you and commences the work as stipulated under the terms & conditions of the
said tender have been fully and properly carried-out by the said bidder and accordingly
discharges the guarantee.

We also agree that your decision as to whether the bidder has committed any breach or non-
observance of the terms & conditions of the said tender shall be final and binding on us.

We undertake to pay the Consultant any money so demanded by the Consultant notwithstanding
any dispute or disputes raised by the Agency/supplier(s) in any suit or proceedings pending
before any Court or Tribunal relating thereto, our liability under this present being absolute and
equivocal.

The payment so made by us under this bond shall be a valid discharge of our liability for payment
there under and the Agency/supplier(s) shall have no claim against us for making such a payment.

This guarantee shall continue to be in full force and effect for a period of 120 days from the date of
submission of bid. Notwithstanding the above limitations, we shall honour and discharge the
claims preferred by you within thirty days of expiry of this guarantee.

We shall not revoke this guarantee during its currency except with your previous consent in
writing. This guarantee shall not be affected by any change in Constitution of our Bank or of the
Bidder firm. Your neglect or forbearance in the enforcement of the payment of any money, the
payment whereof is intended to be hereby secured or the giving of time for the payment hereto
shall in no way relieve us our liability under this guarantee.

Dated thisday of 201

Yours faithfully

Signature & seal of the Bank (Authorized Signatory)

MANUFACTURER'S AUTHORIZATION FORM

No. -----

Dated -----

To

Dear Sir,

Tender No. -----

We _____ who are established and reputed manufacturer of _____ (name & description of goods offered) having factories at _____ (address of factory) do hereby authorize M/s _____ (Name & address of agent) which has been our dealer/distributor since _____, to submit a bid, and sign the contract with you for the goods manufactured by us against the above tender.

No company or firm or individual other than M/s _____ are authorized to bid and conclude the contract for goods manufactured by us against this specific tender.

We hereby extend our full guarantee and warranty as per the clause of Condition of Contract and Additional Specific Conditions of Contract of above tender for goods and services offered for supply by our authorized firm .

Yours faithfully,

(Name)
(Name of Manufacturer)

Note: This authorization letter should be on the letter head of the manufacturer and should be signed by a person competent and having the power of attorney to bind the manufacturer. It should be included by the bidder in its bid.

TECHNICAL SPECIFICATIONS

TECHNICAL SPECIFICATIONS OF MEDICAL GAS MANIFOLD SYSTEM

Scope of Works –

Works for Installation Testing and commissioning of already supplied equipment, Copper pipeline and Accessories and Turnkey works of Medical Gas Manifold System (MGMS) should be done as per the balance works of Annexure-I including supply, installation and commissioning of Electric Distribution Panel and AGSS Unit with necessary spares at District Hospital, Dickoya, Srilanka and handover of Complete MGMS to the Hospital.

1.0 INSTALLATION, TESTING, COMMISSIONING OF OXYGEN SYSTEM

1.1 Oxygen Manifold: Main with Middle Frames

Oxygen Manifold: Emergency with Middle Frames

The Manifold has been configured for 2 x 12 nos. of Oxygen Cylinders and is suitable to withstand a pressure of 145 Kg/cm², along with high-pressure copper annealed tail pipes with end Brass adapter suitable for Oxygen Cylinders and manifold.

Top frame comprising of high pressure copper pipes of size 1/2" NB x 15swg with high pressure brass fittings made of high tensile brass and connections through non- return valves; high pressure copper tail pipes, made of high pressure copper pipe of size 1/4" NB x 15 swg. The design of middle and bottom frames has been provided to fit both round and flat bottom cylinders safely. The manifold has been tested (hydraulically) at 3500 psig and necessary test certificates accompany along with the supply.

1.2 Installation, Testing, Commissioning of Automatic Oxygen Control Panel with changeover Alarm

The Oxygen Control Panel shall be of microprocessor based and preferably Digital Display Type. Pressure reduction shall be in two stages. Panel shall be integrated with pressure gauges inside panel on downstream of pressure regulator. Panel shall be fitted with standby line regulator. Line regulators shall have pressure relief mechanism for testing and servicing purpose.

Panel shall be Fully Automatic and shall switch over from "Bank in Use" to 'Reserve Bank' without fluctuation in delivery line pressure and without the need of external electrical power. After the switch-over, the "Reserve Bank" shall become the "Bank in Use" and the "Bank in Use" shall become the

“Reserve Bank”. The Control Panel will be powered by a microprocessor. The unit shall be compact and enclosed in NEMA 3 enclosure.

A Microprocessor circuit board assembly shall provide a relay output to give indication when or just before the manifold switches from one bank of cylinders to another. The switch over shall be mechanically controlled, not electrically.

To avoid excess pressure being supplied to the distribution system, a pneumatically relief valve for the line regulator shall be incorporated. An intermediate pressure relief valve shall be installed between the high-pressure regulators and the line delivery regulators.

The control panel incorporates six coloured LED's, three for the Left Bank and three for the Right Bank: Green for Bank in use, Amber for Bank ready and Red for Bank empty. Both the Left and Right bank pressures and the main line pressure should be displayed on the front door of the cabinet by means of LED's. All pressure transducers, micro switches, and display LED's shall be pre-wired to an internal microprocessor circuit board.

All components inside the Control Panel like Pressure Regulators, piping and control switching equipment shall be cleaned for Oxygen Service and installed inside the cabinet to minimize tampering with the regulators or switch settings.

The Control Panel should be made to provide Heavy Duty with a Flow Capacity of over 1500 lpm at 60 psig.

- 1.3 Installation, Testing, Commissioning of Installation, Testing, Commissioning of Emergency Oxygen system has been configured with 4-cylinder oxygen manifold along with a High Pressure Regulator which will be mounted on the Emergency Manifold System for reducing the cylinder pressure suitable to the line pressure.

2.0 **INSTALLATION, TESTING, COMMISSIONING OF NITROUS OXIDE SYSTEM**

2.1 **Nitrous Oxide Manifold: Main with Middle Frames Nitrous Manifold: Emergency with Middle Frames**

Nitrous Oxide Manifold for 2 + 2 nos. of cylinders is suitable to withstand a pressure of 145 Kg/cm², along with high-pressure copper annealed tail pipes with end Brass adapter suitable for N₂O Cylinders and manifold.

Top frame comprising of high pressure copper pipes of size 1/2" NB x 15swg with high pressure brass fittings made of high tensile brass and connections through non- return valves; high pressure copper tail pipes, made of high pressure copper pipe of size 1/4" NB x 15 swg. The design of middle frames has been provided to fit both round and flat bottom cylinders safely. The manifold has been tested (hydraulically) at 3500 psig and necessary test certificates is accompany along with the supply.

2.2 Installation, Testing, Commissioning of Automatic Nitrous Oxide Control Panel with changeover Alarm

The Nitrous Oxide Control Panel shall be of microprocessor based and preferably Digital Display type. Pressure reduction shall be in two stages. Panel shall be integrated with pressure gauges inside panel on downstream of pressure regulator. Panel shall be fitted with standby line regulator. Line regulators shall have pressure relief mechanism for testing and servicing purpose.

Panel shall be Fully Automatic and shall switch over from "Bank in Use" to 'Reserve Bank' without fluctuation in delivery line pressure and without the need of external electrical power. After the switch-over, the "Reserve Bank" shall become the "Bank in Use" and the "Bank in Use" shall become the "Reserve Bank". The Control Panel will be powered by a microprocessor. The unit shall be compact and enclosed in NEMA 3 enclosure.

A Microprocessor circuit board assembly shall provide a relay output to give indication when or just before the manifold switches from one bank of cylinders to another. The switch over shall be mechanically controlled, not electrically.

To avoid excess pressure being supplied to the distribution system, a pneumatically relief valve for the line regulator shall be incorporated. An intermediate pressure relief valve shall be installed between the high-pressure regulators and the line delivery regulators.

The control panel incorporates six coloured LED's, three for the Left Bank and three for the Right Bank: Green for Bank in use, Amber for Bank ready and Red for Bank empty. Both the Left and Right bank pressures and the main line pressure should be displayed on the front door of the cabinet by means of LED's. All pressure transducers, micro switches, and display LED's shall be pre-wired to an internal microprocessor circuit board.

All components inside the Control Panel like Pressure Regulators, piping and control switching equipment shall be cleaned for Oxygen Service and installed inside the cabinet to minimize tampering with the regulators or switch settings.

The Control Panel should be made to provide Heavy Duty with a Flow Capacity of over 700 lpm at 60 psig

2.3 A High Pressure Regulator will be mounted on the single cylinder Emergency Manifold System for reducing the cylinder pressure suitable to the line pressure.

3.0 INSTALLATION, TESTING, COMMISSIONING OF COMPRESSED AIR SYSTEM

3.1 Compressed Air System

Medical compressed air system comprising of **two nos.** of Oil-free, Air cooled, Reciprocating Air Compressors each having 15 HP Electric Motor with 57 CFM capacity at 8.5 Kg/sq.cm mounted with 1500 litres Receiver Tank and Filter, Non-Return Valve, Isolation Valves, Air Dryer and Pressure Reducing Station along with interconnecting piping to take care of the requirement of desired no. of air outlets. (Make Anest Iwata/Ingersolrand)

Type of Compressor :

Air Cooled Oil Free Reciprocating Compressors along with TEFC squirrel cage induction motors (V-belt driven). The Compressed Air System has **2 identical Air Compressors** (while one compressor run when the other one remains as stand by).

Air Dryer Type :

Heatless Desiccant Type – 1 no. (Having capacity to take care of the hospital demand) suitable for above compressors.

Pressure Reducing System :

The System should have 2 nos. Pressure Regulators (one in working & one stand-by) to reduce air pressure 4.2 Kg./ cm² required for Medical Air pipeline.

3.2 Auto Drain for Air Receiver should be provided.

3.3 **3-Stage Breathing Air Filters :**

The breathing air filters has maximum contaminant removal efficiency with minimum pressure drop. The filtration system conform to breathing air filtration as per ISO 8573 Ch – I Standard.

4.0 INSTALLATION, TESTING, COMMISSIONING OF VACUUM SYSTEM

4.1 Vacuum System

To design, fabricate, test & install medical vacuum system comprising of **2 nos.** of System of Lubricated, Air-cooled, Reciprocating Vacuum Pumps each having capacity 110 CFM, 7.5 HP Motor, common 2000 litres Receiver Tank, Filter, Non-Return Valve, Isolation Valves, Auto Switch Gear to set minimum & maximum operating vacuum and interconnecting piping to take care of the requirements of desired no. of vacuum outlets. (Make- Ingersol Rand/ Anest Iwata)

4.2 Type of Vacuum Pumps :

Lubricated, Air-cooled, Reciprocating Vacuum Pumps along with TEFC squirrel cage induction motors (V-belt driven) The Vacuum System has **2 identical Vacuum Pumps** (while one vacuum pump will run, the other one remains as stand by).

Each Vacuum Pump are complete with Base Plate, Belt Guard, V-Belts, Motor and Starter. The system is of Automatic Start and Stop Type. The Pumps are connected to a common vertical receiver of 2000 Ltrs capacity. The receiver has a drain valve at the bottom.

Vacuum Bacterial filtration:

Medical Vacuum filters are used for removal of bacteria & other contamination from the suction side of vacuum pumps, preventing infection of pump and the atmosphere.

These elements are pleated construction giving a high surface area and long operational life. The efficiency exceeds the 0.005% penetration specified in HTM2022 for infectious disease unit.- i.e. complete bacterial removal.

Element is fitted in an aluminum housing suitable for various capacities. These are internally protected against corrosion by an alocrom treatment. The inner & outer surfaces of the housing are epoxy coated. Complete assembly is fitted with a sterilisable drain flask with isolation valve for removal of liquid if any. Differential pressure indicators are provided to monitor the status of element.

5.0 INSTALLATION, TESTING, COMMISSIONING OF GAS OUTLET POINTS

Double Lock Outlet

Outlets have been manufactured with a 165 mm length, Copper inlet pipe stub which is silver brazed to the outlet body. Body has been of one piece brass construction. For positive pressure gas services, the outlet has been equipped with a primary and secondary check valve and the secondary check valve has been rated at minimum 200 psi in the event the primary check valve is removed for maintenance.

The outlet assembly has separate colour coding for each service and accepts only corresponding gas specific adapters.

All outlets has been cleaned and de-greased for medical gas service, factory assembled and tested.

The medical gas outlets have been of quick connecting and wall mounted modular type.

6.0 LAYING OF COPPER PIPE LINE (Remaining 40% pipe line works to be laid in the hospital building)

Solid drawn, seamless, de-oxidized, non-arsenical, half-hard, tempered and de-greased **copper pipe** conforming to BS : 6017, 1981, Table 2 (Cu - DHP) and manufactured as per BS : 2871, 1971 Part I, Table X (or as per

BSEN 1057). All medical graded copper pipes are de-greased & delivered capped at both ends. The pipes are accompanied with manufacturers test certificate for the physical properties & chemical composition. Copper pipe also has third party inspection certificate from **Lloyds'** Register Services.

The Pipe Sizes used are from among as under :

Pipe OD (in mm)	Thickness (in mm)
12	0.7
15	0.9
22	0.9
28	0.9
42	1.2
54	1.2
76.1	2

Copper fittings has been made of copper and suitable for a steam working Pressure of 17 bar and especially made for brazed socket type connections. All copper fittings are conform to BS 864/EN 1254.

INSTALLATION & TESTING

Installation of piping is carried out with utmost cleanliness. Only pipes, fittings and valves which has been degreased and brought in polythene sealed bags has been used at site. Pipe fixing clamps has been of non ferrous or non-deteriorating plastic suitable for the diameter of the pipe.

All pipe joints have been made using fluxless brazing method. All joints of copper to copper and are brazed by silver brazing filler material without flux.

Adequate supports have been provided while laying pipelines to ensure that the pipes do not sag. The spacing of supports not exceed 1.5 meter for any size of pipe. Suitable sleeves has been provided wherever pipes cross through walls / slabs. All pipe clamps has been non-reactive to copper.

After erection, the pipes has been flushed with dry nitrogen gas and then pressure tested with dry nitrogen / Medical Air at a pressure equal to twice the working pressure for a period of not less than 24 hours. All leaks and joints

revealed during testing has been rectified and re-tested till the pressure in pipes stands for at least 24 hours.

All the piping system has been tested in the presence of the engineer or his authorized representative.

PAINTING

All exposed pipes is has been painted with two coats of synthetic enamel paint and colour codification is has been as per IS : 2379 of 1963.

7.0 INSTALLATION, TESTING, COMMISSIONING OF ISOLATION VALVES

The **isolation valves** are Non Lubricated Ball type, **suitable for oxygen service**. All valves has been pneumatically tested for twice the working pressure and **factory de-greased** for medical gas service before supply.

8.0 INSTALLATION, TESTING, COMMISSIONING OF VALVE BOX ASSEMBLY :

Valve Box are made of Powder Coated M.S. Material.
Valve Box Assembly consist of the following :

- Lever operated quarter turn valve (i.e. 90 degree shut off ball valve- has been manufactured by ISO 9001 company and factory degreased) with brass body and chrome plated brass ball.
- Brass fittings (Nut, Nipples and extruded brass Adapter) KE Type Seat Brass Block for pressure gauge
- 2" Dial gauges (0 - 10 kg/cm², 0 - 760mm Hg)
- Nylon Bush for copper pipes holding with the valve box
- Beeding for box lead
- Lockable cover with breakable glass so that during normal operation access has been by key. But during emergency operation, access by breaking the glass panel.

9.0 INSTALLATION, TESTING, COMMISSIONING OF ALARM SYSTEM

9.1 The Master Alarm

9.2 Area line pressure alarms

should be as per required locations.

The main alarm and area line pressure alarm (Digital) are micro-processor based which monitor the pressures of medical gases like oxygen, nitrous oxide,

compressed air and vacuum levels at a specific area of piped gas system in any hospital. The electronic circuitry has been such that if the pressure / vacuum in the gas pipeline drops below the present limit, the equipment is give an audio-visual alarm. Visual alarm remains active even after pressing of "Mute" button. But it comes to normal condition when gas pressure / vacuum return to normal level.

The equipment has following features:

- Four Channel Microprocessor Controlled Alarm for Pneumatic & Vacuum Services has the following features:
- Digital Display of Line Pressure for all the services with factory calibrated pressure sensors.
- Color coded LED Display of Line pressure status (High – Caution – Normal – Caution– Low)
- Audible Alarm for High & Low pressure condition.
- Test and Alarm Acknowledge (Mute) facility. (Alarm acknowledge(Mute) time span is programmable from 1 to 60 min).
- Programming facility of alarm limits from front panel (Password protected, preferably to has been done through supplier's engineer).
- Facility to connect to remote alarm box by potential free contacts provided in the alarm box.
- Small and compact design. Light Weight (3 kg)
- Imported highly sensitive gas pressure sensors & CE marked power supply.
- Mounted on a powder coated MS box.
- Nut & Nipples are provided for connection with Pneumatic supply line.
- Low voltage internal operation with input power supply of 220V AC.
- Wall mounting facility.
- Low voltage operation for safety
- High / Low indication
- Test facility
- Mute / silence facility

10.0 INSTALLATION, TESTING, COMMISSIONING OF CEILING PENDANTS

10.1 Rigid Ceiling Pendant

The pendant has been rectangular (365mm x 232mm) and fabricated from stainless steel (18 swg), with all edges and surfaces having polished satin finish. A trim bezel has been provided to trim the column shroud to the finish ceiling. The bezel has been adjustable to compensate for variation in finished ceiling thickness. The column length has been fabricated for specified ceiling height.

The ceiling column structure has been supported from a steel mounting plate furnished with the column. The mounting plate has four, 3/4" diameter holes, one in each corner for attachment to structural ceiling support.

Each pendant has provision for :
Two Oxygen outlets

Two Vacuum outlets
One Nitrous Oxide outlet
One Compressed Air outlet
Two duplex 230 V, 5/15 Amp electrical sockets
Two IV hook

**11.0 SUPPLY, INSTALLATION, TESTING, COMMISSIONING OF AGSS
(Anesthesia Gas Scavenging System)- (Imported)
VACUUM SYSTEM**

The Simplex tank mount design medical vacuum system must include Rotary Vane Dry vacuum pump and associated equipment, one ASME air receiver and one control panel. The only field connections required are system intake, exhaust and power connection at the control panel. All components has been completely pre-piped and pre-wired to a single point service connection.

CONTROL PANEL

The system include a control panel in a NEMA 12 enclosure with externally operable circuit breaker with door interlock, control circuit transformer with fused primary and secondary circuits, H-O-A switch, magnetic starter with 3 leg overload protection, hour meter, motor running light and minimum run timer to prevent short cycle operation.

VACUUM PUMP

The medical vacuum pump operate completely dry with air cooled design, and has been equipped with self-lubricating carbon/graphite vanes with no water requirements. Bearings has been permanently lubricated and sealed.

VACUUM PUMP DRIVE

The Vacuum pump has been direct driven. Torque is transmitted from the motor to the pump through a shaft coupling.

VACUUM PUMP MOTOR

The motor of 1.2 HP capacity has been a continuous duty, 1750 RPM, TEFC NEMA C-face, foot mounted and suitable for 230-440V, 50 hertz, 3 phase electrical service. The pump has the capacity at 19" Hg.

12.0 HP A/S TUBING

High Pressure Tubing for AIR

High Pressure Tubing for vaccum

High Pressure Tubing for vaccum

LP Tubing

13.0 INSTALLATION, TESTING, COMMISSIONING OF HORIZONTAL BED HEAD PANELS

13.1 Bed Head Panel

- Has been made of High Strength Anodised Aluminium Extrusions with inbuilt single railing.
- The chamber of Medical Gas Outlets has been made of anodized aluminium
- Has been powder coated as per the customer's choice.
- The panel has been designed to have provision to accommodate the following:
 - a). Gas Outlets,
 - b) Electrical Sockets / Switches
 - c). Audio Unit
 - d). Room Lighting
- The railing has been designed to have provision to accommodate the following accessories:
 - a). I V Pole
 - b). Infusion pump / Syringe pump stand
 - c). I V Bottle holder
 - d). Medicine / disposable tray
 - e). Examination lamp
 - f). Reading lamp

14.0 ACCESSORIES:

14.1 INSTALLATION, TESTING, COMMISSIONING OF BPC FLOW METER WITH HUMIDIFIER :

Back Pressure Compensated flow meter is of accurate gas flow measurement with following features:

- Control within a range of 0 – 15 lpm.
- It meets strict precision and durability standard.
- The flow meter body is made of brass chrome plated materials.
- The flow tube and shroud components are made of clear, impact resistant polycarbonate.
- Flow Tube has large and expanded 0 – 5 lpm range for improved readability at low flows.
- Inlet filter of stainless steel wire mesh to prevent entry of foreign particles.

- The humidifier bottle is made of unbreakable polycarbonate material and autoclavable at 121 degree Centigrade temperature.

14.2 **INSTALLATION, TESTING, COMMISSIONING OF WARD VACUUM UNITS :**

Ward Vacuum Unit has been of light weight and compact. The unit consists of-

- A regulator,
- A 600 ml. reusable collection jar, made of unbreakable poly carbonate material and fully autoclavable at 121 degree centigrade
- A wall bracket for mounting the jar assembly on the wall.

The vacuum regulator with instant ON / OFF switch has been infinitely adjustable and has vacuum gauge which indicates suction supplied by the regulator. Safety trap has been provided inside the jar to safeguard the regulator from overflowing.

14.3 **INSTALLATION, TESTING, COMMISSIONING OF THEATER VACUUM UNITS**

The unit has been consisting of two reusable 2000 ml shatter resistant bottle, each made up of poly carbonate material and fully autoclavable at 121 degree centigrade.

The vacuum regulator with instant ON / OFF switch has been infinitely adjustable and has vacuum gauge which indicates suction supplied by the regulator. Safety trap has been provided inside the jar to safeguard the regulator from overflowing.

There are a three way selector switch with an option to operate either

- Left, Right or Both.

All the above items has been mounted on a Metallic Trolley having free moving castor wheels.

15. **SUPPLY, INSTALLATION, TESTING, COMMISSIONING OF ELECTRICAL DISTRIBUTION PANEL :-**

Panel shall be wall mounted and fabricated from 16/14 SWG CRCA Sheet duly powder coated. Panel shall incorporate isolators for the following equipments.

- I. Isolator for Medical Compressed air system.
- II. Isolator for Medical Vacuum System
- III. Isolator for AGSS System.

Panel shall have following instrumentations for easy monitoring purpose.:-

- a. Incoming power supply indications of each Phase
- b. Mains indication for mains supply on for each Phase.
- c. Mains shall have digital metering.
- d. Each circuit shall have digital meter.
- e. Mains and each circuit shall be with MCCB only.

16. IN ADDITION TO THE ABOVE, FOLLOWING TURNKEYS FOR INSTALLATION AND COMMISSIONING OF MEDICAL GAS MANIFOLD SYSTEM FOR DICKOYA HOSPITAL SRILANKA IS THE SOLE RESPONSIBILITY OF THE CONTRACTOR:

- Bidder must take into consideration in its bid, costs to be incurred for any additional work pertaining to Civil, Electrical, Mechanical and any other protections relevant as per State/Central Govt. regulation/local authority of Srilanka, Furniture, Servo stabilisers, U.P.S. etc. required for successful installation testing and commissioning of the system and the offered price should include all such costs, each equipment/system is to be considered a package in itself and contractor to execute the order package on a “turn key basis”.
- Providing fixing of **Electrical Gadgets** like ELCB, MCB, Light Points, Power points, etc in the Medical Gas Manifold System.
- Installation of MCB, ACB, ELCB & OCB of Havell/Siemens/L&T/Schneider etc for Control Panel for Medical Gas Manifold System.
- Installation of all **electrical cabling** must be of IS: 1554 (As per latest amendment) standard and wiring as per IS: 732 standard and proper earthing of all Medical Gas Manifold System and other electrical instrument and accessories in the Medical Gas Pipeline System as per standard guidelines of BIS.
- Ventilation of Manifold and Plant Room of the Medical Gas Manifold System.
- Arrangement for requisite **fire fighting** for Manifold Room & Plant Room and its maintenance for the contract period

In addition to the above mentioned equipment/appliances, if the contractor thinks it necessary to include any other equipment/appliances, accessories etc. for the MGMS then that may be provided after approval from Engineer in-charge.

The sizes are approximate. Minor variations in sizes shall be acceptable subject to prior approval of the Engineer.

The contractor shall be responsible for the complete works including the following :

- **Final electrical safety test, system test and calibration should be done by authorized person with test instruments.**
- **All electrical accessories like cable wire, electrical outlets, switches etc,**

should be fire proof of reputed make, certified for electrical safety.

- **Wherever makes have not been specified for certain items, the same shall be as per BIS and as per approval of HSCC.**
- **The contractor should provide test certificate equipments to be supplied for MGMS**
- **Training of personnel of the Institute should be 15 days at least**
- **The contractor should prepare and submit layout plan to HSCC for after supply, installation, testing and commissioning.**

Status of Medical Gass Manifold System_Dickoya_Sri Lanka

Annexure -

Name of Work – Supply installation Testing and commissioning of Medical Gas Manifold System at District Hospital Dickoya					
S. No.	Description	Unit	Quantity Supplied by Agency	Balance Quantity to be Supplied	Balance Work
1.0	Oxygen System :				
1.1	12+ 12Bulk CylinderManifold for Oxygen completewith Middle Frame,NRV and Tail Pipes as required as per specifications	Set	1	0	Supply Completed. Installation, Testing & Commissioning yet to be completed.
1.2	AutomaticOxygenControlPanelwithautomaticswitchoverfrom one bank to other bank of cylinders completewith accessories as per specification	No.	1	0	
1.3	Four-cylinderEmergency systemfor Oxygen completewith accessories as per specification	Set	1	0	
2.0	Nitrous Oxide System :				
2.1	2+ 2Bulk CylinderManifoldfor NitrousOxide completewith Middle Frame,NRV and Tail Pipes completewith accessories as per specification	Set	1	0	Supply Completed. Installation, Testing & Commissioning yet to be completed.
2.2	AutomaticNitrousOxide ControlPanel with automaticswitchoverfrom one bank to other bank of cylinders completewith accessories as per specification	No.	1	0	
2.3	Single-cylinderEmergency systemfor Nitrous Oxide completewith accessories as per specification	Set	1	0	
3	Compressed Air System :				
3.1	Compressed Air System Consisting of 2 nos Air Compressors,each having 15 HP Motor with 57.18 cfm capacityat 8.5Kg/cm ² pressure Tank Mounted,each ReceiverCapacity1500 ltrs, common 50 CFM Air drier, Pressure ReducingUnit etc. completewith accessories as per specification Make- Ingersollrand/Anest Iwata/Equivalent	Set	1	0	Supply Completed. Installation, Testing & Commissioning yet to be completed.
3.2	AutoDrainSystemfor Air receivers completewith accessories as per specification	No.	2	0	

3.3	3-Stage Breathing Air Filter for 50 CFM as per ISO 8573-1 complete as required with accessories as per specification	Set	2	0	
4.0 Vacuum System :					
4.1	2 nos. of vacuum pump each having with 7.5 HP Motor with common 2000 litres Receiver Filters, Electrical etc. complete as required with accessories as per specification Mal Ingersol-Rand/Anesta Iwata make	Set	1	0	Supply Completed. Installation, Testing & Commissioning yet to be completed.
4.2	Bacterial Filter suitable for Vacuum Pump system complete as required with accessories as per specification	Set	1	0	
5.0 Gas Outlet complete as required with accessories as per specification					
5.1	Oxygen	No.	141	0	Supply Completed. Installation, Testing & Commissioning yet to be completed.
5.2	Nitrous Oxide	No.	11	0	
5.3	Medical Air 4 Bar	No.	45	0	
5.4	Vacuum	No.	141	0	
5.4	AGSS Outlets as per NFPA99 standard	No.	7	0	
6	Distribution Copper Piping having copper pipes as per BS EN 1057 standard with 3rd party inspection from Lloyds' complete as required with accessories as per specification				
	Cu Pipe 76.1 mm Od x 2 mm thick	Mtr.	83	0	Supply Completed. 60% installation completed
	Cu Pipe 54 mm Od x 1.2 mm thick	Mtr.	138	0	
	Cu Pipe 42 mm Od x 1.2 mm thick	Mtr.	482	0	
	Cu Pipe 28 mm Od x 0.9 mm thick	Mtr.	698	0	
	Cu Pipe 22 mm Od x 0.9 mm thick	Mtr.	1122	0	
	Cu Pipe 15 mm Od x 0.9 mm thick	Mtr.	988	0	
	Cu Pipe 12 mm Od x 0.7 mm thick	Mtr.	515	0	
7	Isolation Ball Valve (Factory-Degreased with Brass Adaptor complete as required with accessories as per specification				
	15 MM.	No.	16	0	Supply Completed. Installation, Testing & Commissioning yet to be completed.
	76 MM.	No.	8	0	
8	Valve Box complete as required with accessories as per specification				

	2 services	No.	3	3	Supply & Installation, Testing & Commissioning Complete
	3 services	No.	1	1	Supply & Installation Completed.
	4 Services	No.	8	0	Supply Completed. Installation, Testing & Commissioning yet to be completed.
	5 services	No.	1	0	
9	Alarm complete as required with accessories as per specification				
9.1	Master Alarm	No.	1	0	Supply Completed. Installation, Testing & Commissioning yet to be completed.
9.2	Area Pressure Alarm (Digital)	No.			
	2 services	No.	2	0	Supply Completed. Installation, Testing & Commissioning yet to be completed.
	3 services	No.	1	0	
	4 services	No.	8	0	
10	CEILING PENDANT complete as required with accessories as per specification				
10.1	Rigid Ceiling Pendant (S.S. make)	No.	5	0	Supply Completed. Installation, Testing & Commissioning yet to be completed.
11.0	HP A/S Tubing:				
	High Pressure Tubing for AIR	Mtr.	30	0	Supply Completed. Installation yet to be completed.
	High Pressure Tubing for vacuum	Mtr.	30	0	
	LP Tubing	Mtr.	100	0	
12.0	Horizontal Bed Headed Panel	Nos	10	0	Supply Completed. Installation, Testing & Commissioning yet to be completed.
	High Strength Anodised Aluminium Extrusion with inbuilt single railing, Medical Gas Outlet etc complete as required with accessories as per specification				
13.0	ACCESSORIES				
13.1	BPC Flowmeter with humidifier bottle & adapter complete as required with accessories as per specification	No.	141	0	Supply Completed. Installation, Testing & Commissioning yet to be completed.
	Kit Conversion - Oxygen	No.	7	0	
	Kit Conversion - Nitrous Oxide	No.	7	0	

13.2	Ward Vacuum Unit with 600ml polycarbonate collection jar complete as required with accessories as per specification	No.	141	0
13.3	Theater Suction Unit with regulator trolley & 2x2000ml poly carbonate collection jars	No.	7	0

MAKES OF EQUIPMENT SUPPLIED AT SITE

SL. NO.	ITEM DESCRIPTION	UNIT	Q'NTY	Make
1.0	Oxygen System :			
1.1	Installation, testing and commissioning of 12+12 Bulk Cylinder Manifold for Oxygen complete with Middle Frame, NRV and Tail Pipes as required as per specifications	Set	1	AKTIV
1.2	Automatic Oxygen Control Panel with automatic switchover from one bank to other bank of cylinders complete as required with accessories as per specification	No.	1	AKTIV
1.3	Four-cylinder Emergency system for Oxygen complete as required with accessories as per specification	Set	1	AKTIV
2.0	Nitrous Oxide System :			
2.1	2+2 Bulk Cylinder Manifold for Nitrous Oxide complete with Middle Frame, NRV and Tail Pipes complete as required with accessories as per specification	Set	1	AKTIV
2.2	Automatic Nitrous Oxide Control Panel with automatic switchover from one bank to other bank of cylinders complete as required with accessories as per specification	No.	1	AKTIV
2.3	Single-cylinder Emergency system for Nitrous Oxide complete as required with accessories as per specification	Set	1	AKTIV

3	Compressed Air System :			
3.1	Compressed Air System Consisting of 2 nos Air Compressors, each having 15 HP Motor with 57.18 cfm capacity at 8.5Kg/cm2 pressure, Tank Mounted, each Receiver Capacity 1500 ltrs, common 50 CFM Air drier, Pressure Reducing Unit etc. complete as required with accessories as per specification Make- Ingersolrand/Anest Iwata/Equivalent	Set	1	ANEST IWATA
3.2	Auto Drain System for Air receivers complete as required with accessories as per specification	No.	2	ANEST IWATA
3.3	3-Stage Breathing Air Filter for 50 CFM as per ISO 8573-1 complete as required with accessories as per specification	Set	2	TRIDENT
4.0	Vacuum System :			
4.1	2 nos. of vacuum pumps each having with 7.5 HP Motor with common 2000 litres Receiver, Filters, Electricals, etc. complete as required with accessories as per specification Make-Ingersol-Rand/Anesta Iwata make	Set	1	INGERSOLRAND
4.2	Bacterial Filter suitable for Vacuum Pump system complete as required with accessories as per specification	Set	1	TRIDENT
5.0	Gas Outlet complete as required with accessories as per specification			M.R.ENGG.
5.1	Oxygen	No.	141	
5.2	Nitrous Oxide	No.	11	
5.3	Medical Air 4 Bar	No.	45	
5.4	Vacuum	No.	141	
5.4	AGSS Outlets as per NFPA99 standard	No.	7	

6	Laying of remaining (As per Annexure-I) Copper Piping having copper pipes as per BS EN 1057 standard complete as required with accessories as per specification in the hospital building			MAXFLOW
	Cu Pipe 76.1 mm Od x 2 mm thick	Mtr.	83	
	Cu Pipe 54 mm Od x 1.2 mm thick	Mtr.	138	
	Cu Pipe 42 mm Od x 1.2 mm thick	Mtr.	482	
	Cu Pipe 28 mm Od x 0.9 mm thick	Mtr.	698	
	Cu Pipe 22 mm Od x 0.9 mm thick	Mtr.	1122	
	Cu Pipe 15 mm Od x 0.9 mm thick	Mtr.	988	
	Cu Pipe 12 mm Od x 0.7 mm thick	Mtr.	515	
7	Isolation Ball Valve (Factory-Degreased) with Brass Adaptor complete as required with accessories as per specification			M.R.ENGG
	15 MM.	No.	16	
	76 MM.	No.	8	
8	Valve Box complete as required with accessories as per specification			M.R.ENGG
	2 services	No.	3	
	3 services	No.	1	
	4 Services	No.	8	
	5 services	No.	1	
9	Alarm complete as required with accessories as per specification			
9.1	Master Alarm	No.	1	M.R.ENGG
9.2	Area Pressure Alarm (Digital)	No.		M.R.ENGG
	2 services	No.	2	
	3 services	No.	1	

	4 services	No.	8	
10	Installation, testing and commissioning of CEILING PENDANT complete as required with accessories as per specification			HI_TEK
10.1	Rigid Ceiling Pendant (S.S. make)	No.	5	
11.0	Supply, Installation, testing and commissioning of AGSS UNIT (Imported)			
	Simplex AGSS UNIT having dry Rotary Vane Vacuum System with 1.2 HP motor and receiver with control panel complete as required with accessories as per specification	No.	1	
12.0	HP A/S Tubing:			AKTIV
	High Pressure Tubing for AIR	Mtr.	30	
	High Pressure Tubing for vaccum	Mtr.	30	
	LP Tubing	Mtr.	100	
13.0	Horizontal Bed Headed Panel	Nos	10	AKTIV
	High Strength Anodised Aluminium Extrusions with inbuilt single railing, Medical Gas Outlets etc complete as required with accessories as per specification			
14.0	ACCESSORIES			
14.1	BPC Flowmeter with humidifier bottle & adapter complete as required with accessories as per specification	No.	141	AKTIV
	Kit Conversion - Oxygen	No.	7	AKTIV
	Kit Conversion - Nitrous Oxide	No.	7	AKTIV
14.2	Ward Vacuum Unit with 600ml poly carbonate collection jar complete as required with accessories as per specification	No.	141	AKTIV

14.3	Theater Suction Unit with regulator, trolley & 2x2000ml poly carbonate collection jars	No.	7	AKTIV
15	Supply, Installation, Testing, Commissioning of Electrical Distributional Panel	No	1	
16	Turnkey works complete as required with accessories as per specification	lot	1	

OUTLET DISPOSITIONS AT DISTRICT HOSPITAL, DICKOYA, SRILANKA

		Oxygen	Nitrous	Air	Vac.	AGSS	Pendant
Lower Ground Floor							
	Minor OT	2	1	2	2	1	
	Procedure/ Endoscopy	1	x	1	1	x	
Upper Ground Floor							
	Minor OT	4	2	4	4	2	1
	Recovery	1	x	1	1	x	
	Burns Unit	1	x	1	1	x	
1st Floor							
	ICU Beds	20	x	10	20	x	
	OTs	4	3	4	4	3	3
	Pre-Ops	4	x	x	4	x	
	Post Ops	8	x	8	8	x	
2nd Floor							
	Labour Room	4	2	2	4	x	
	Delivery Room	2	2	2	2	x	
	Neo-natal ICU	8	x	8	8	x	
	Labour OT	2	1	2	2	1	1
	Semi-Pvt Wards (4x2 beds)	8	x	x	8	x	
	Pvt Wards (2x1 beds)	2	x	x	2	x	
	Gen.Ward (5x8 beds)	30	x	x	30	x	
	TOTAL						
3rd Floor							
	Semi-Pvt Wards (4x2 beds)	8	x	x	8	x	
	Pvt Wards (2x1 beds)	2	x	x	2	x	
	Gen.Ward (5x8 beds)	30	x	x	30	x	
	TOTAL	141	11	45	141	7	5