

Expression of Interest (E.O.I.)

**Govt. Lady Goshen Hospital –ONGC –MRPL Block Phase II
SUPPLY, DESIGN, ERECTION & COMMISSIONING OF COMPLETE MEDICAL GAS PIPE LINE
SYSTEM BOQ (NSR)**

Sl. N	Specification	Qty.	Unit	Rate	Amount
1	<p>Oxygen Manifold: Main :- 10+10 Cylinder Oxygen Manifold should be suitable to withstand a pressure of 140 Kg/Cm² and above 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 12mm I.D x 1.5mm wall thick, 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 7mm I.D x 1.5mm wall thick. The design of middle and bottom frames should be provided to fit both round and flat bottom cylinders safely. The manifold should be tested (hydraulically) at 3500 pig.</p>	1	SET		
2	<p>Fully Automatic Oxygen Control Panel: The fully automatic control panel should be the following features: ÉShould be enclosed in a metal cabinet with a hinged cover. The side covers of the panel should be made of fiberglass. ÉPanel cover should be fitted with a lock to prevent unauthorized access can be swung open for maintenance. ÉShould be Fully Automatic Changeover operation and no manual action ÉThe service gas should pneumatically operate gas change over system. ÉDelivery of gas through control panel should not be dependent on electricity. ÉShould be capable of delivering very high flow rate not less than 1300 litres per minute at delivery pressure.ÉShould have Visual indication of the Éstate of the manifold by 3 gauges within the control panel, which should be clearly visible through the transparent cover. ÉShould have Audio ó visual alarm indication for changeover of empty cylinder bank to filled cylinder bank. ÉBuilt in transformer to ensure safe operation by low voltage. ÉMicroprocessor based alarm signal control with high -dbØSiren system.</p>	1	NO'S		

3	<p>Oxygen Manifold: Emergency 2 Cylinder Oxygen Manifold should be suitable to withstand a pressure of 140 Kg/Cm² and above, 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 12mm I.D x 1.5mm wall thick, 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 7mm I.D x 1.5mm wall thick and a single stage high pressure high flow regulator connected to a high pressure brass block. The design of middle and bottom frames should be provided to fit both round and flat bottom cylinders safely. The manifold should be tested (hydraulically) at 3500 psig and necessary test certificates should accompany along with the supply. Manifold should have in built Siren System.</p>	1	SET		
4	<p>Nitrous Oxide Manifold: Main 02+02 Cylinder Nitrous Oxide Manifold should be suitable to withstand a pressure of 140 Kg/Cm² and above 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 12mm I.D x 1.5mm wall thick, 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 7mm I.D x 1.5mm wall thick. The design of middle and bottom frames should be provided to fit both round and flat bottom cylinders safely. The manifold should be tested (hydraulically) at 3500 pig.</p>	1	SET		
5	<p>Semi Automatic control panel for Nitrous Oxide. Semi automatic control panels are should be highly test designed for various control functions required during supply of oxygen through the manifold unit. Should be Enclosed in a metal cabinet. This semi automatic control panel should be highly efficient in triggering the signal for the Reserve system to go operational in case primary and secondary system fails in emergency. This panel is normally connected in a permanent mode and change over is semi automatic. The Semi automatic control should have bellow features:- Control panel cover made of M.S.duly powder coated. Easy maintenance. Highly reliable. Designed for safety and continuity of flow supply at a constant pressure. Pressure gauge facility to indicate the gas pressure of each header and pipe line distribution pressure. Capable to provide a distribution flow rate in excess of 1500LPM. Incorporation of safety puncture in case pressure exceeds 100Psi.</p>	1	NO'S		

6	<p>Nitrous Oxide manifold: Emergency. An Emergency nitrous oxide manifold should be consisting of 1 nos of service point with heavy duty regulator connection set.</p>	1	SET		
7	<p>Vacuum Supply System: Type :Reciprocating, Air-cooled. Capacity :149.60cfm, 4233 lpm No. of Cylinders :2 Nos. in each vacuum pump Drive :Belt driven. No. of Vacuum pumps : 2 Nos. Motor Capacity : 10 HP, kw 7.5 Receiver Capacity : 2000 liters water capacity vertical type and Receiver type : Vertical type with inlet, outlet and drain provisions Accessories : Non-return value, Vacuum Switch, Vacuum gauge, Isolation Valves & Vacuum Filter. Interconnecting Piping : Copper pipe with brass / Mild Steel fittings Note : To run alternative system one main & one standby</p>	2	SET		
8	<p>Vacuum Bacteria Filter: A bacterial filter should be fitted between each pump and the reservoir, which should have replaceable elements and each shall be capable of passing the total design flow. The filters should be arranged such that one filter can be taken out for servicing without interrupting or restricting the vacuum service as a whole. The filters should have a penetration not exceeding 0.05% when tested by the sodium flames test in accordance with BS3928. Moisture traps should also be fitted on each leg. These may be combined with the filter units. The traps should have removable transparent drain bowls which can be removed without affecting plant operation. The bowls should be sterilisable by using moist steam at 2.2 bar and 138 degree Celsius in porous load sterilizer.</p>	1	SET		

<p>Compressed Air System: Type :Reciprocating, Air cooled Capacity :57.2 cfm 1620 lpm No. of Cylinders : 2 Nos. in each Air Compressor Drive :Belt driven No. of Air Compressors : 2 Nos. Motor Capacity : 15 HP Receiver Capacity : 1000 liters water capacity Receiver type : Vertical type with inlet, outlet & drain provisions Air Drier Type : Heatless Desiccant Type Air Drier Make : Trident/GEM Air Drier Capacity : 50 cfm No. of Air driers : 1 No. Accessories : Non return valves, Air pressure switch, Pressure Gauge, Isolation Valves. Air Filters etc. Interconnecting Piping : Mild Steel Pipe of 2" with fittings. Note : To run alternative system one main & one standby</p>	2	SET		
<p>10 3- Stage Breathing Air Filter f or 57.2 CFM.</p>	1	SET		
<p>Copper Piping: All copper pipes should be Solid drawn, seamless, deoxidized, non arsenical, half hard, tempered and degreased materials conforming to BS:EN :13348:2001 + A1:2005 Pipes sizes should be used as under: 42 mm OD x 1.2 mm thick 35 mm OD x 1.2 mm thick 28 mm OD x 0.9 mm thick 22 mm OD x 0.9 mm thick 15 mm OD x 0.9 mm thick 12mm. Od x 0.9 mm thick 10 mm OD x 0.9 mm thick Copper Fittings:Fittings should be made of copper and suitable for a stem of working pressure of 17 bar and should confirm to BS 864 with specially made for brazed socket type connections.</p>				
<p>11 Copper Pipe 54mm. ODx1.5 mm.t hick</p>	200	Mtr		
<p>12 Copper Pipe 42mm. ODx1.5 mm. t hick.</p>	500	Mtr		
<p>13 Copper Pipe 35mm. ODx1.2 mm. t hick.</p>	400	Mtr		
<p>14 Copper Pipe 28mm. ODx0.9 mm. t hick.</p>	544	Mtr		
<p>15 Copper Pipe 22mm. ODx0.9 mm. t hick.</p>	1500	Mtr		
<p>16 Copper Pipe 15mm. ODx0.9 mm. t hick.</p>	3500	Mtr		
<p>17 Copper Pipe 12 mm. Odx0.9 mm.</p>	120	Mtr		

18	Copper Pipe 10mm. ODx0.9 mm. t hick.	700	Mtr		
	OUTLET POINTS :- Should have terminated properly Double locking DIN type valves which have a parking facility which also avoids interchanging of outlets and keys(Gas specific probes)				
19	Oxygen Outlets - drops of 10 mm dia copper pipe terminated properly DIN type valves which have a parking facility which also avoids interchanging of outlets and keys(Gas specific probes)	216	NO'S		
20	Vacuum Outlets - drops of 10 mm dia copper pipe terminated properly DIN type valves which have a parking facility which also avoids interchanging of outlets and keys(Gas specific probes)	216	NO'S		
21	Compressed Air Outlets 4 Bar - drops of 10 mm dia copper pipe terminated properly DIN type valves which have a parking facility which also avoids interchanging of outlets and keys(Gas specific probes)	39	NO'S		
22	Nitrous Oxide Outlets - drops of 10 mm dia copper pipe terminated properly DIN type valves which have a parking facility which also avoids interchanging of outlets and keys(Gas specific probes)	7	NO'S		

ACCESSORIES

23	<p>Oxygen Flow meter with Humidifier Bottle: ÉFlow meter should be Backpressure Compensated. ÉFlow meter should be accurate gas flow measurement and control within a range of 0-15 liters per minute. ÉIt should meet strict precision and durability standards. ÉFlow meter body should be made of brass material. ÉFlow tube and shroud components should be made of clear, impact resistant polycarbonate. É The humidifier bottle should be unbreakable polycarbonate material and autoclavable at 134 degrees centigrade. The humidifier should have built in safety valve.</p>	210	NO'S		
24	Single piece wall mounted suction collection & regulation unit. With jar capacity of 600ml each shall be provided at each of the bed side. Jars are should be made of autoclavable materials. The units shall be clamped to the wall using suitable clamps.	210	NO'S		
25	<p>Theatre Vacuum Unit: ÉThe unit should comprise of two reusable 2000 ml shatter resistant bottle, each made up of poly carbonate material and fully auto cleavable at 134 degree centigrade. É Should have a vacuum regulator with instant ON / OFF switch a three way selector switch with an option to operate either. - Left, Right or Both All the above items should be mounted on a Trolley having a free moving castor wheels.</p>	10	NO'S		

	ISOLATION VALVES: Should be 90 degree turn, ball valves of brass body, duly chrome plated on the outer periphery, SS ball with high quality Teflon seated, connected to pipeline with brass ferrule for easy maintenance. ID of the copper pipe and the ball valve should have same dimensions to avoid the flow friction				
26	Isolation Valves 54 mm	10	NO'S		
27	Isolation Valves 42 mm	4	NO'S		
28	Isolation Valves 35 mm	4	NO'S		
29	Isolation Valves 28 mm	10	NO'S		
30	Isolation Valves 22 mm	15	NO'S		
31	Isolation Valves 15 mm	60	NO'S		
32	Zonal Valve box four Gas services An Zonal area valve box should have bellow spec. Wall mounted M.S. box with powder coated & lockable,front glass mounting easily visible & using imported brass body quarter turn ball valves using for opening & closing position. The valve box door cannot be close during valve close position.	7	NO'S		
33	Zonal Valve box three Gas services An Zonal area valve box should have bellow spec. Wall mounted M.S. box with powder coated & lockable, front glass mounting easily visible & using imported brass body quarter turn ball valves using for opening & closing position.The valve box door cannot be close during valve close position.	5	NO'S		
34	Master Area alarm Panel	1	NO'S		
35	Digital Area Alarm for Four Gas Systems:- Micro processor controlled Area Gas alarm panel five Lines, Should audio- visual alarms for each gas used on the floor and come fitted with test and mute button. Running on electricity 220V, these units are suggested to be fitted on each floor as well as areas of heavy usage. It should be fitted with a digital pressure gauge. It indicates low, medium & high pressure sensors.	7	NO'S		
36	Digital Area Alarm for Three Gas Systems:- Micro processor controlled Area Gas alarm panel five Lines, Should audio- visual alarms for each gas used on the floor and come fitted with test and mute button. Running on electricity 220V, these units are suggested to be fitted on each floor as well as areas of heavy usage. It should be fitted with a digital pressure gauge. It indicates low, medium & high pressure sensors.	6	NO'S		

37	<p>Digital Area Alarm for Two Gas Systems:- Micro processor controlled Area Gas alarm panel five Lines, Should audio- visual alarms for each gas used on the floor and come fitted with test and mute button. Running on electricity 220V, these units are suggested to be fitted on each floor as well as areas of heavy usage. It should be fitted with a digital pressure gauge. It indicates low, medium & high pressure sensors.</p>	10	NO'S		
38	<p>Double Arm Pendants for operating theatre :- The material of the Pendant should be Two-armed rotary ceiling mounted surgical Pendant High-strength aluminum alloy. Extension arm 700+700mm.Loading capacity: 70-150kg.Level degrees rotation: Ö340°N.W.:158kg. Should be provision for Gas outlets Oxygen 02 nos, Vacuum 02 nos, Air 4 Bar 01 nos, Air 7 Bar 01 nos, Nitrous Oxide 01 nos, Power socket 08 nos, Grounding terminal 01 nos, Platform 03 nos,IV pole 01 nos, Drawer 01 nos.</p>	5	NO'S		
39	<p>Single Arm Pendants for operating theatre :- The material of the Pendant should be Two-armed rotary ceiling mounted surgical Pendant High-strength aluminum alloy. Extension arm 700mm.Loading capacity: 70-150kg.Level degrees rotation: Ö340°N.W.:158kg. Should be provision for Gas outlets Oxygen 02 nos, Vacuum 02 nos, Air 4 Bar 01 nos, Air 7 Bar 01 nos, Nitrous Oxide 01 nos, Power socket 08 nos, Grounding terminal 01 nos, Platform 03 nos ,IV pole 01 nos, Drawer 01 nos.</p>	2	NO'S		
40	<p>Bed Headed Panel and Railing :- Double railing Bed head panels Should have bellow Specifications . Accessories 1. IV Stand Extendable type with aluminum slider. 2. Monitor stand wall Panel mounted. 3. Ward vacuum unit slider.4. Two duplex 230 V, 5/15 Amp. Electrical Sockets Provision Gas/Vacuum outlets as follows :- Two oxygen outlet. One Vacuum outlet. One Compressed Air outlet 4 Bar.</p>	30	NO'S		
41	<p>Conversion Kit for Anesthesia for Oxygen:- Should have high pressure antistatic tubing which is color coded.</p>	10	NO'S		
42	<p>Conversion Kit for Anesthesia for Nitrous Oxide: Should have high pressure antistatic tubing which is color coded.</p>	10	NO'S		