



SUI NORTHERN GAS PIPELINES LIMITED

GAS HOUSE, 21 KASHMIR ROAD, P.O. BOX 56, LAHORE (PAKISTAN)

Ref: SND-1823/16

Dated: 11.04.2016

M/s Inteslimc
Lahore.

Dear Sirs,

INVITATION TO BID
OUR TENDER ENQUIRY NO.SND-1823/16
COVERING DOMESTIC GAS METERS
OPENING DATE: 17 MAY, 2016.

1-(A). We enclose one set of our above noted Tender Enquiry for supply of subject noted item comprising of the following:-

- | | | | |
|--------|--|---|------------------|
| (a) | General Terms | : | Appendix-"A" |
| (b) | Bid Form | : | Appendix-"B" |
| (c)(i) | Price Schedule to be filled in by Foreign suppliers/their local agents | : | Appendix-"C(i)" |
| (ii) | Price Schedule to be filled in by local manufacturers/suppliers | : | Appendix-"C(ii)" |
| (d) | Questionnaire carrying important commercial Terms | : | Appendix-"D" |
| (e) | Schedule of Requirements, and Shipment | : | Appendix-"E" |
| (f) | Technical Specifications | : | Appendix-"F" |
| (g) | Specimen of Authority Letter | : | Annexure-"I" |
| (h) | Specimen of Bid Bond | : | Annexure -"II" |
| (i) | Specimen of Performance/Warranty Bond Guarantee | : | Annexure -"III" |
| (j) | Integrity Pact | : | Annexure -"IV" |
| (k) | Specimen of purchase order | : | Annexure- "V" |
| (l) | Clause 32(a) Price Preference | : | Annexure- "VI" |

1-(B) The bids against this tender enquiry are invited on **Single stage two envelopes system basis**. The bids shall comprise a single package containing two separate envelopes. Each envelope shall contain separately the **"TECHNICAL PROPOSAL"** and the **"FINANCIAL PROPOSAL"**. (Original plus two photocopies)

The Technical and Financial Proposals must include amongst others, the following documents:-

Technical Proposals

- Technical Literature (Clause 20 of Instructions to Bidders")
- Questionnaire (Appendix-'D')
- Schedule of requirements along with offered delivery (Appendix-'E')
- Clause by Clause commentary on technical specifications (Appendix-'F')

Cont'd.....P/2

Telephones Exch: { +(92-42)9082000
+(92-42)9082006

Telephones: { 042-99085044
042-99085048

Fax: 042-99201275

www.sngpl.com.pk



OHSAAS 18001 ISO 14001



SUI NORTHERN GAS PIPELINES LIMITED

GAS HOUSE, 21 KASHMIR ROAD, P.O. BOX 56, LAHORE (PAKISTAN)

-2-

Financial Proposals

- Price Schedule
(Rate of exchange for comparison purpose should be of Tender closing date i.e Technical proposal opening date)
- Bid Bond in original in accordance with clause 17 (page 7 & 8) of "Instructions to Bidders" and specimen attached as Annexure-II, must be conspicuously placed in separate envelope with Financial Proposal of the bids.
- Copy of Sales Tax Registration Certificate (in case offer is made on F.O.R basis).
- Copy of Income Tax Certificate (in case offer is made on F.O.R basis).
- Questionnaire (Appendix-'D').

- i) The envelope shall respectively be marked as "**TECHNICAL PROPOSAL**" and "**FINANCIAL PROPOSAL**" in bold and legible letters to avoid confusion and seal properly.
- ii) Initially, only the envelope marked as "**TECHNICAL PROPOSAL**" shall be opened.
- iii) The envelope marked as "**FINANCIAL PROPOSAL**" shall be retained in the custody of SNGPL without being opened.
- iv) SNGPL shall evaluate the "**TECHNICAL PROPOSAL**" in accordance with the terms and conditions of the tender enquiry without reference to the price and will reject any proposal which do not conform to the specified requirements.
- v) During the technical evaluation no amendments in the technical proposal shall be permitted. Therefore, bidders are required to submit their offers complete in all respects addressed to:-

GENERAL MANAGER (PROCUREMENT)
SUI NORTHERN GAS PIPELINES LIMITED
1ST FLOOR, GAS HOUSE, 21-KASHMIR ROAD,
LAHORE – PAKISTAN

- vi) After evaluation of the "**TECHNICAL PROPOSAL**" the company shall within the validity period, publicly open the financial proposals of the technically accepted bids only at a time, date and venue announced and communicated in advance to all technically acceptable bidders.
 - vii) The "**FINANCIAL PROPOSAL**" of the bids found technically non responsive shall be returned un-opened to the respective bidders.
2. The original plus two copies each of "**TECHNICAL**" and "**FINANCIAL PROPOSAL**" of the bid must be enclosed in duplicate sealed cover. The inner and outer envelope must bear the word "**CONFIDENTIAL**", **TENDER FOR** "**DOMESTIC GAS METERS**" and Tender Enquiry No. **SND-1823/16** due for closing on **17 MAY, 2016** at **1530 hours**, and forward to the General Manager (Procurement), Sui Northern Gas Pipelines Ltd, Gas House, 1st Floor, 21-Kashmir Road, Lahore – Pakistan.
- 2.(i) Bid Bond in original as stipulated at Sr.17 pages 7 & 8 of "Instructions to Bidders", must be conspicuously placed in separate envelope with Financial Proposal of the bids. Reference of Bid Bond and the name of the Bank executing it must be indicated in the letter covering your Technical bid without mentioning the amount of Bid Bond.

Cont'd.....P/3

Telephones Exch: { +(92-42)9082000
+(92-42)9082006

Telephones: { 042-99085044
042-99085048

Fax: 042-99201275

www.sngpl.com.pk



OHSAS 18001 ISO 14001



SUI NORTHERN GAS PIPELINES LIMITED

GAS HOUSE, 21 KASHMIR ROAD, P.O. BOX 56, LAHORE (PAKISTAN)

-3-

3. Your firm and irrevocable offer in Pak Rupees must be based on free delivery at our Manga Stores, 38 K.M Multan Road, Lahore.
- i) The delivery shall conform to the terms given in the 'Delivery Schedule' (Appendix 'E'). Earlier delivery will also be acceptable.
 - ii) General Terms, attached as Appendix 'A' must be taken in to consideration before submitting your quotation.
 - iii) Your offer must remain open for a period of 90 days from the closing date of the tender.
 - iv) If you have any doubts as to the meaning of any portion of the specifications or General Terms, you should when submitting your bid, set out in your covering letter, the interpretation upon which you rely.
 - v) We reserve the right either to cancel the Tender or to increase or decrease the quantities by 15% or cancel any or all the items shown in the 'Commercial Term Sheet/Delivery Schedule' without assigning any reason, whatsoever. We also reserve the right to amend the closing date of this tender enquiry. However, decrease beyond 15% shall be subject to concurrence by the bidder.
 - vi) We also reserve the right to have items inspected by a third party at our own expense.
 - vii) It must be indicated by the bidders in their offers/quotations that their quotation fully conforms to technical specifications and to the terms and conditions of the tender enquiry.
 - viii) Only one authorized representative of a bidder will be allowed to attend the public opening of bids, who will be required to submit an authority letter (as per specimen attached as Annexure-I) in his favor issued by the respective bidder(s) for attending the public opening of bids, failing which he will not be allowed to attend the public opening.
 - ix) Clauses mentioned above will make part of the original Terms and Conditions of the contract and will supersede if found in contradiction with any clause mentioned at any other place in the tender enquiry.
 - x) Non-compliance of above terms and conditions may result in rejection of a bid.
 - xi) Any attempt to obstruct competition by any means including formation of cartels will lead to rejection of your bid. Furthermore, this may also lead to delisting of your firm from list of approved/pre-qualified manufacturers of the tendered item(s).

Cont'd.....P/3-A

Telephones Exch: { +(92-42)9082000
+(92-42)9082006

Telephones: { 042-99085044
042-99085048

Fax: 042-99201275

www.sngpl.com.pk



OHSAS 18001 ISO 14001

4. Bids received through cable, telex or fax shall not be acceptable. Similarly, bids received without original bid security shall not be accepted. It may be noted that submission of both bid security and the bid to the G.M. (Procurement) at the place and address indicated above and by the date and time specified herein is the sole responsibility of the bidder or his agent, and the purchaser (SNGPL) disclaim all or any responsibility, whatsoever, for their collection from any agency, any individual, or any place other than that specified above failure on the part of the bidders or their agents to comply with this requirement will be the sole responsibility of the bidders, and they will neither seek or claim to seek any relief whatsoever in this regard.
5. Corrections in the bids, quotation, offers by usage of "correcting fluid" or by "overwriting" is specifically prohibited. All corrections, if necessary, must be made by "scoring out/deleting" the original entries and by inserting corrected entries. This will strictly apply when correction are required to be made in the bid price or in a write-up or specifications that change the substance of the bid. All such corrections must be authenticated by putting the same signatures through which the bid has been executed, or through a formal duly signed amendment modification to the bid. Failure to meet this requirement will make the bid eligible for disqualifications.
6. Tenders will be received in this office on or before 17-5-16 at 15:30 hours (tender closing time) and will be opened publically on the same day at 16:00 hours in our office at 1st Floor, Gas House, 21-Kashmir Road, Lahore. In case of holiday(s) falling on the date of tender opening, tender will be opened at the same time on the next working day. It will be the responsibility of the bidder to deliver the bids before the closing time. This company does not take any responsibility whatsoever of collecting the bids from any agency. Tenders received after the tender closing time will not be entertained, and will be returned.
 - 6.1 Only one authorised representative of a bidder will be allowed to attend the public opening of bids. A representative for a bidder will be required to submit an authority letter (as per Annexure "1") in his favour by the respective bidders for attending the public opening of bids, failing, which he will not be allowed to attend the public opening.
 - 6.2 More than one quotation supported by the same Principals /Manufacturers will be disregarded. Therefore, only one quotation supported by any original copy of Peroforma Invoice/Quotation and valid agency agreement from the Principals will be entertained. Direct Officers from the principal will however be encouraged.
 - 6.3 The bidders should offer only one product against each item, in conformity with the specifications stipulated in the tender documents. In case of alternate offers against an item in this tender enquiry, the bidders must provide detailed specification of the alternate offer alongwith its technical literature. Details as to how the alternates offered, differ from the main offer must be provided, failing which complete bid may be considered as non-responsive.
 - 6.4 In case of any problem/clarification from Sui Northern Gas Pipelines, supplier/agent are required to only contact Deputy Chief Officer Procurement (Import) at

Phones Direct 042-99201449, 99085028 otherwise, the supplier/agents would risk disqualification.

6.5 Any effort by a bidder to influence the purchaser in the bid evaluation, bid comparison or contract award decisions may result in the rejection of the bidder's bid.

7 We reserve the right to amend the opening date of this tender or cancel the tender enquiry altogether, or refloat the tender enquiry without assigning any reason, whatsoever

Yours faithfully

SUI NORTHERN GAS PIPELINES LIMITED

dy Chief
(ASIM ALI MIR)
Officer (Procurement)
For Managing Director

M/S. Interlink Lahore.

R# 00491.

dt: 13/4/16

SCHEDULE OF REQUIREMENTS, SPECIFICATIONS & SHIPMENT
OUR TENDER ENQUIRY NO. SND-1823/16
COVERING DOMESTIC GAS METERS

The approximate total requirement of "Domestic Gas Meters" and shipments required is as under:-

Item No.	Description/Specification	Qty. (Nos.)	Price Per Unit FOB	Price Per Unit CFR	Total Price CFR
1	Gas Meters, Domestic, Cl:250 / G-6 (with Coupling)	90,000			
2	Gas Meters, Domestic, Type: G-4	170,000			

(Other detailed Technical Specifications as per attached Appendix 'F')

IMPORTANT NOTES:-

1. Bid will be evaluated on item wise lowest priced bidder basis.
2. **For Local Bidders:-**
 Item 1: 20,000 Meters per month starting 30 days after receipt of purchase order.
 Item 2: 40,000 Meters per month starting 30 days after receipt of purchase order.
3. **For Foreign Bidders:-**
4. Quantities of all the items on per month basis as mentioned above but starting within 90 days of the receipt of Operative L/c.
5. We require the delivery as per above mentioned schedule / period. You however, may quote your best delivery schedule / period.
6. Bids will be evaluated on CFR basis. However, order(s) can be placed on FOB (port of shipment) or C&F basis.
7. Performance warranty bond guarantee must be submitted within 15 days after receipt of purchase order as per clause 18 of the tender. Delay in L/C operativeness due to Delay in submission of PWBG shall not affect delivery in any way. Further cut off date for the LD charges calculation will be calculated after giving 21 days from receipt of order to the local agent (15 days for PWBG plus 6 days to and fro postage).
8. CFR prices must be quoted for each item separately failing which the CFR charges if quoted on lump sum will be added to the FOB prices on pro rata prices basis. CFR prices calculated in such manner shall be used for comparison evaluation and ordering purposes.
9. Brand new and unused material should be quoted. Reconditioned and refurbished material will not be acceptable.
10. Customer list as required else where in this tender document shall include exactly same type of Material regarding size, design and material of construction as offered in bid proposal.
11. The bidder shall clearly indicate names, addresses of manufacturer's country of origin instead of showing group of countries of manufactures.
12. Invoice and packing list must be placed at an obvious place with the each consignment and certificate to this effect must be submitted along with the shipping documents. In the event of non adherence, any penalty imposed by the Pakistan customs authorities will liable to be recovered from the beneficiary or shipper, as applicable
13. Any payment of custom duty, sales tax on account of incorrect shipping documents and demurrage caused at the port of discharge owing to either incorrect shipping documents or late receipt of non-negotiable, negotiable shipping against the time period stipulated in the PO/LC or levy of any penalty due to missing of any document in violation of Pakistan Custom rules will be charged to beneficiary / shipper as applicable.
14. **CONTRACTOR'S CONTROL**
 All the bidders are required to note and comply with General Procedure "CONTRACTORS CONTROL". The manual has been placed at SNGPL website www.sngpl.com.pk under the main pull down menu "ENERGY TIPS"
15. **SALES TAX SPECIAL PROCEDURE-(WITHHOLDING) RULES, 2007)**
 SNGPL as a withholding agent, as per Sales Tax Special Procedure (withholding) Rules 2007, in accordance with clause No.2 (Responsibility of Withholding Agents), shall deduct an amount equal to one fifth of the total Sales Tax shown in the Sales Tax Invoice issued by the supplier and make payment of the balance amount.
16. **FOR LOCAL AGENTS ONLY**
 - The supplier should also mention their National Tax Number (NTN) and also enclose a photocopy of their NTN alongwith their offer.
 - Please also give your import registration number, date and validity in your offer.
 - The supplier should also furnish Sales Tax Registration Certificate.
 - Local supplier may also quote their rates on F.O.R basis.

=====

**DIAPHRAGM TYPE GAS METERS G-6 OR EQUIVALENT
(CL-250 POSITIVE DISPLACEMENT METERS)**

Appendix 'F'

Sr. No.	Description	Required specifications
1-	Design and Dimensions:	According to ANSI B 109.1 (latest Edition) / O.I.M.L. (latest Edition) and / or other Company's specific requirements set out in these specifications for diaphragm type positive displacement gas meters. Wherever the specific requirements differ from ANSI B 109.1 (latest Edition) / O.I.M.L. (latest Edition), the specific requirements shall prevail.
2-	Fluid in Line:	Natural Gas
3-	Specific Gravity of Gas:	0.5 to 0.7
4-	Flow Measurement Accuracy:	Between Q min and 0.1 Q max = +3% Between 0.1 Q max and Q max = ±1.5% (The bidder should submit test results of sample meters alongwith the bid)
5-	Operating Temperature Range:	-10°C to + 49°C
6-	Storage Temperature:	-10°C to + 60°C
7-	Average Atmospheric Pressure:	14.65 psi
8-	Temperature Compensation:	Not Required
9-	Back Flow Protection	Meter should be protected against back flow (Reverse flow) of gas by using back flow flap or non return valve or any other suitable device which should not be accessed/removed through outlet port.
10-	Back Run Stop:	Meter Counter should be protected from running back wards.
11-	Reading Indication:	Direct reading front counter with suitable flow proving provisions.
12-	Diaphragm:	Synthetic rubber, long life, temperature resistant.
13-	Housing (Upper & Lower Body):	Pressure die-cast aluminum. (The bidder should provide the third party test certificate of material (pressure die-cast aluminum) testing of housing (upper & lower body))
14-	Inlet and Outlet Connection Size (Ferrule):	Pressure die-cast aluminum with Inlet and Outlet Connections as an integral part of meter upper housing or having separately inserted steel ferrules. WG 7/8 (Standard, DIN ISO-228) or ¾" / 1" / 1 ¼" connection size with a set of coupling having arrangement to connect with ¾" BSPT Pipe.
15-	Allowable Operating Pressure:	0.69 bar (Please note, it is minimum requirement, however pressure exceeding this limit is also acceptable).
16-	Corrosion Resistant:	All internal components should be corrosion resistant.
17-	Capacity:	Meter capacities should be in actual cubic meter per hour (ACMH) of Natural Gas as mentioned below: Maximum capacity= 10 m ³ /hr. Minimum Capacity= 0.06 m ³ / hr The capacity of a meter is the flow in cubic meter per hour on average differential pressure across the meter connections of 0.5 inch water column. <ul style="list-style-type: none"> ◦ The differential pressure at the prescribed minimum and maximum capacity should also be specifically advised. ◦ The meter case shall be able to withstand a burst test using on internal pressure equal to at least 1.5 times MAOP of meter.
18-	Minimum Cyclic Volume / Tangent Crank Rotation:	2 dm ³ / revolution (Please note, it is minimum requirement, however C.V above than this limit is also acceptable).
19-	Colour:	We would like meter paint in Azure Blue colour RAL No. 5009, however, matching color may be accepted.
20-	Index:	<p>(i) In cubic meter, counter register capacity minimum 5 (five) digits, direct reading in accordance with OIML-R 6 standard, clause 5.1.2.2.</p> <div style="text-align: center;"> </div> <p>First 05 digits to read in m³ and last 03 digits in dm³. Last digit (8th digit) should have OPTO reflective silvered zero.</p> <p>(ii) The ratchet shaft of the index assembly and pivots of the gear train should be made of stainless steel or any other corrosion / rust resistant material.</p> <p>(iii) The Pivots should be provided with proper key / lock to hold the gears.</p> <p>(iv) Index assembly box may be the part of upper casing or plastic box with built-in index assembly should be attached with upper body.</p> <p>(v) Last 03 digits of index assembly should have different colour than first 05 digits preferably Red or Black colour.</p> <p>(vi) The index glass should be unbreakable, chemical and impact resistant.</p>

[Signature]

		(vii) The teeth of gears and index assembly digit rolls should have proper depth and strength to avoid slippage and misalignment. (viii) The index assembly should be in straight position (i.e. not at angle) to take clear snap short of reading by HHU (Hand Held Unit). (ix) Meter Counter and drive must be free from external magnetic influence from all sides.
21-	Measuring Capsule Support:	If meter having measuring capsule, it should have suitable supports to prevent damage. Measuring capsule should preferably be protected from tampering through outlet port by preventing direct access to capsule. (For cost comparison a 2% rider will be added on the bid price quoted for meter without protection).
22-	Drop Test:	The meter should pass the following drop test: Meter to be dropped to the hard surface from the height of 0.5m from the up right position. No damage to any internal / external parts of meter including measuring capsule supports should occur and should have no effect on the meter measurement accuracy.
23-	Fitting of Diaphragm:	The diaphragm should be fitted with adequate supports / bonds alongwith compression fitting so as to eliminate slippage of diaphragm edges. Meter/diaphragm side body plates should be in one piece.
24-	Connectors & Knurlings:	All connector & knurling which transfer the motion of diaphragm upto the index assembly should have deep knurling / grooves to eliminate slippage. Important parts where deep knurling / grooves to be provided are as under: (i) Flag Rods (ii) Flag Arms
25	Installation:	Top mounted connections male threaded with embossed flow direction from left to right.
26-	Tamper Proofing / Sealing:	(i) Plastic cup seals with suitable impression at both sides of the index assembly should be provided (hologram seal impression are preferable). (ii) Plastic cup seals with suitable impression to be provided on the diagonal bolts holding upper and lower body of meter on opposite sides. (iii) Plastic cap seal to be provided on any other vulnerable point (points) to prevent access inside the meter / counter. (iv) Provided plastic cup seals should be rigidly fixed i.e. cannot be removed without breakage.
27-	Field Performance Test:	The meters should pass the following field performance test: Meter to be installed in continuous/hiaus flowing conditions at variable flow rates for 10 days and should have no effect on the meter measurement accuracy.
28-	Meter Serial No. & Detail:	Meter Serial No., Type, Capacity, Year of Manufacturing, Qmax, Qmin, Pressure Rating, Measuring Units & Cyclic Volume should be printed on the Index Assembly (counter) and preferably have Bar-Code on Index Assembly (Counter).
29-	Samples:	Submission of five (05) No. meters as sample alongwith bid is mandatory. Provided samples must be comply all the clauses of technical specifications.
30-	Essential Spare Parts:	Should provide list of essential spare parts which will be required for post meter repairing and flow proving alongwith Part Nos. & respective unit price.
31-	Literature:	Complete literature for operation, repair alongwith all part list of these meters should be provided.
32-	Packaging:	Packaging of meter at time of delivery should be serial wise and serial number should be displayed on packing cartons.
33-	Training:	Training of two Engineers at manufacturing facility in order to develop their knowledge regarding operation / maintenance of these meters.

DIAGRAM - "A"**NOTES:**

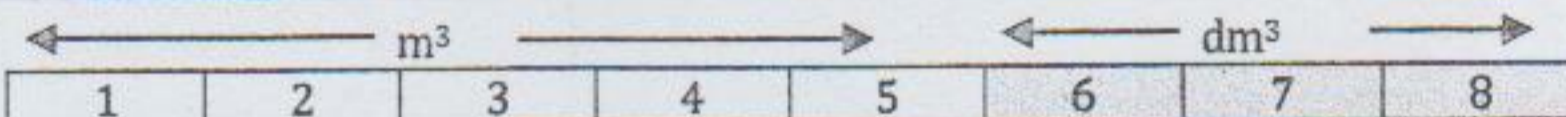
Manufacturing firm should be ISO 9001 certified.

BID EVALUATION CRITERIA:

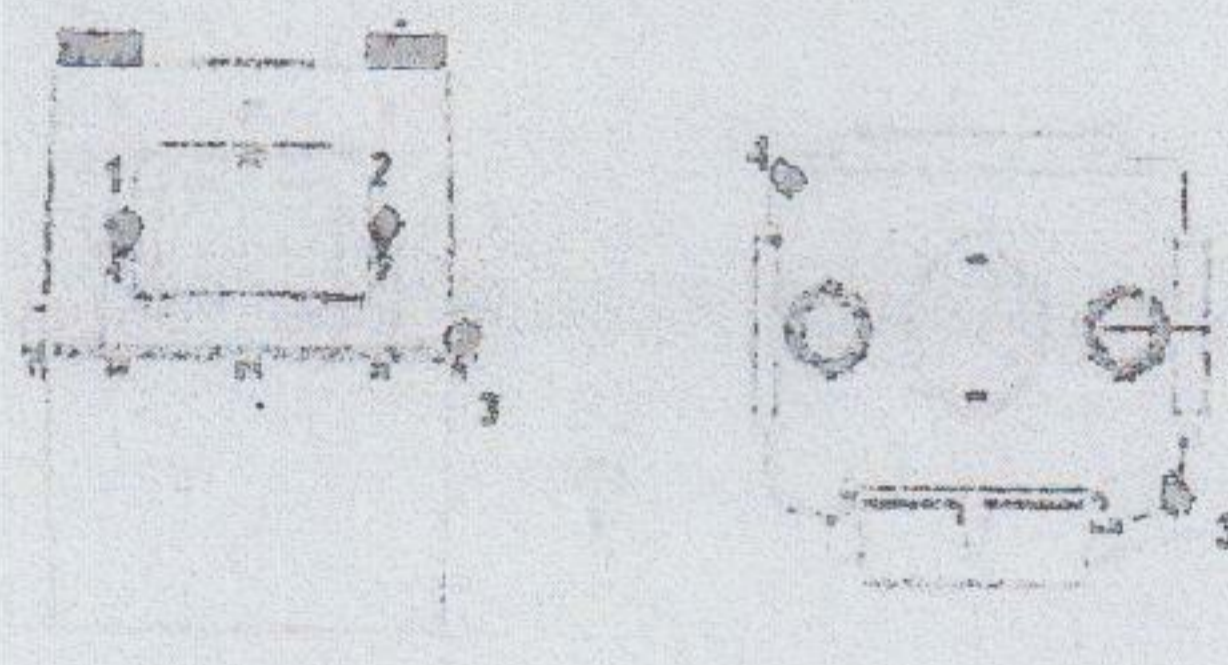
Offers of the bidders will be evaluated strictly in accordance with the above stated technical specifications.

**DIAPHRAGM TYPE GAS METERS G-4 OR EQUIVALENT
(CL-175 POSITIVE DISPLACEMENT METERS)**

Appendix 'F'

Sr. No.	Clause Title	Clause Description
1	Design and Dimensions:	According to ANSI B 109.1 (latest Edition) / O.I.M.L. (latest Edition) and / or other Company's specific requirements set out in these specifications for diaphragm type positive displacement gas meters. Wherever the specific requirements differ from ANSI B 109.1 (latest Edition) / O.I.M.L. (latest Edition), the specific requirements shall prevail.
2	Fluid in Line:	Natural Gas
3	Specific Gravity of Gas:	0.5 to 0.7
4	Flow Measurement Accuracy:	Between Q min and 0.1 Q max = $\pm 3\%$ Between 0.1 Q max and Q max = $\pm 1.5\%$ (The bidder should submit test results of sample meters alongwith the bid)
5	Operating Temperature Range:	-10°C to + 49°C
6	Storage Temperature:	-10°C to + 60°C
7	Average Atmospheric Pressure:	14.65 psi
8	Temperature Compensation:	Not Required
9	Back Flow Protection	Meter should be protected against back flow (Reverse flow) of gas by using back flow flap or non return valve or any other suitable device which should not be accessed/removed externally.
10	Back Run Stop:	Meter Counter should be protected from running back wards.
11	Reading Indication:	Direct reading front counter with suitable flow proving provisions.
12	Diaphragm:	Synthetic rubber, long life, temperature resistant.
13	Housing (Upper & Lower Body):	Pressure die-cast aluminum. (The bidder should provide the third party test certificate of material (pressure die-cast aluminum) testing of housing (upper & lower body))
14	Inlet and Outlet Connection Size (Ferrule):	Pressure die-cast aluminum with Inlet and Outlet ferrules as an integral part of meter upper housing or having separately inserted steel ferrules. WG 7/8 (Standard, DIN ISO-228) or 3/4" / 1" / 1 1/4" connection size with a set of coupling having arrangement to connect with 3/4" BSPT Pipe.
15	Allowable Operating Pressure:	0.5 Bars (Please note, it is minimum requirement, however pressure exceeding this limit is also acceptable).
16	Corrosion Resistant:	All internal components should be corrosion resistant.
17	Capacity:	Capacities in SCMH of natural gas at 0.5" w.c. differential and 0.6 specific gravity of gas delivered at 14.65 psia and 60°F Q max = 6.0 m ³ / hr Q min = 0.04 m ³ / hr
18	Minimum Cyclic Volume / Tangent Crank Rotation	1.2 dm ³ / revolution (Please note, it is minimum requirement, however C.V above than this limit is also acceptable).
19	Colour	We would like meter paint in Azure Blue colour RAL No. 5009, however, matching color may be accepted.
20	Index	<p>(i) In cubic meter, counter register capacity minimum 5 (five) digits, direct reading in accordance OIML-R 6 standard, clause 5.1.2.2.</p>  <p>First 05 digits to read in m³ and last 03 digits in dm³. Last digit (8th digit) should have OPTO reflective silvered zero.</p> <p>(ii) The ratchet shaft of the index assembly and pivots of the gear train should be made of stainless steel or any other corrosion / rust resistant material.</p> <p>(iii) The Pivots should be provided with proper key / lock to hold the gears.</p> <p>(iv) Index assembly box should be preferably the part of upper casing or plastic box with built-in index assembly should be attached with upper body.</p> <p>(v) Last 03 digits of index assembly should have different colour than first 05 digits preferably Red or Black.</p> <p>(vi) The index glass should be unbreakable, chemical and impact resistant</p> <p>(vii) The teeth of gears and index assembly digit rolls should have proper depth and strength to avoid slippage and misalignment.</p> <p>(viii) The index assembly should be in straight position (i.e. not at angle) to take place clear snap short of reading by HHU (Hand Held Unit).</p> <p>(ix) Meter Counter and drive (overall meter performance) must be free from external magnetic influence from all sides.</p>

21	Measuring Capsule Support:	If meter having measuring capsule, it should have suitable supports to prevent damage. Measuring capsule should preferably be protected from tampering through outlet port by preventing direct access to capsule. (For cost comparison a 2% rider will be added on the bid price quoted for meter without protection).
22	Drop Test:	The meter should pass the following drop test: Meter to be dropped to the hard surface from the height of 0.5m from the up right position. No damage to any internal / external parts of meter including measuring capsule supports should occur and should have no effect on the meter measurement accuracy.
23	Fitting of Diaphragm:	The diaphragm should be fitted with adequate supports / bonds alongwith compression fitting so as to eliminate slippage of diaphragm edges. Meter/diaphragm side body plates should be in one piece.
24	Connectors & Knurlings:	All connector & knurling which transfer the motion of diaphragm upto the index assembly should have deep knurling / grooves to eliminate slippage. Important parts where deep knurling / grooves to be provided are as under: (i) Flag Rods (ii) Flag Arms
25	Installation:	Top mounted connections with embossed flow direction left to right
26	Tamper Proofing / Sealing:	(i) Plastic cup seals with suitable impression at both sides of the index assembly should be provided (hologram seal impression are preferable). (ii) Plastic cup seals with suitable impression to be provided on the diagonal bolts holding upper and lower body of meter on opposite sides. (iii) Plastic cap seal to be provided on any other vulnerable point (points) to prevent access inside the meter / counter. (iv) Provided plastic cup seals should be rigidly fixed i.e. cannot be removed without breakage.
27	Field Performance Test:	The meters should pass the following field performance test: Meter to be installed in continuous/hiatus flowing conditions at variable flow rates for 10 days and should have no effect on the meter measurement accuracy.
28	Meter Serial No. & Detail:	Meter Serial No., Type, Capacity, Year of Manufacturing, Qmax, Qmin, Pressure Rating, Measuring Units & Cyclic Volume should be printed on the Index Assembly (counter) and preferably have Bar-Code on Index Assembly (Counter).
29	Samples:	Submission of five (05) No. meters as sample alongwith bid is mandatory. Provided samples must be comply all the clauses of technical specifications.
30	Essential Spare Parts:	Should provide list of essential spare parts which will be required for post meter repairing and flow proving alongwith Part Nos. & respective unit price.
31	Literature:	Complete literature for operation, repair alongwith all part list of these meters should be provided.
32	Packaging:	Packaging of meter at time of delivery should be serial wise and serial number should be displayed on packing cartons.
33	Training:	Training of two Engineers at manufacturing facility in order to develop their knowledge regarding operation / maintenance of these meters.

DIAGRAM - "A"**NOTES:**

- i. Manufacturing firm should be ISO 9001 certified.

TECHNICAL BID EVALUATION CRITERIA:

Offers of the bidders will be evaluated strictly in accordance with the above stated technical specifications.