



OIL & GAS DEVELOPMENT COMPANY LIMITED
PROCUREMENT DEPARTMENT (LOCAL), ISLAMABAD
SCHEDULE OF REQUIREMENT

**Material : FABRICATION AND SUPPLY OF REGENERATION GAS
SCRUBBER**

Due Date:

Tender Enquiry No: PROC/LF/PT/17326/18

Bid Bond Value : RS.300,000/-

Attachment(if any) : YES

EVALUATION WILL BE CARRIED OUT ON FULL

Sr No	Description	Quantity	Make/Brand offered	Unit	Unit Price (PKR) Inclusive Of All Taxes Except GST	Unit Price (PKR) Inclusive of GST	Total Price (PKR) Inclusive of GST	Delivery Period Offered	deviation from Tender Spec. If Any
1	Regeneration Gas Scrubber Along With Demister, H=2488 MM (TANGENT LINE TO WELD LINE) ID 700mm, Design Pressure 950PSI Operating Presuure 750PSI As Per Attached Drawings# 165-8- MPV- 001,002, 003 & 004 and TOR	1		Number					

Special Note:- The prospective bidders also download the master set of Tender Document

- The prospective bidders may keep in touch with OGDCL web site for downloading the clarifications/amendments (if any) issued by OGDCL.
- DELIVERY IN 06 MONTHS FROM LPO ISSUE TO QADIRPUR PLANT, DISTT.GHOTKI SINDH.100% PAYMENT AFTER DELIVERY & INSPECTION AT QADIRPUR SITE.

Discount (if any) shall only be entertained on Schedule of Requirement of Bidding Document (Financial Proposal). If the discount is mentioned elsewhere in the bid, the same shall not be entertained.



OIL & GAS DEVELOPMENT COMPANY LIMITED
PROCUREMENT DEPARTMENT (LOCAL), ISLAMABAD
SCHEDULE OF REQUIREMENT

Mandatory Checklist

Please confirm the compliance of the following mandatory information along with the bid(s) (failing which bids(s) will not be accepted)

Documents	To be Attached with the Technical/Financial Bids	Compliance	
		Yes <input type="checkbox"/>	No <input type="checkbox"/>
Original Bid Bond	Technical Bid	Yes <input type="checkbox"/>	No <input type="checkbox"/>
Copy of NTN Certificate	Technical Bid	Yes <input type="checkbox"/>	No <input type="checkbox"/>
Copy of GST Certificate	Technical Bid	Yes <input type="checkbox"/>	No <input type="checkbox"/>
Confirmation that the Firm is appearing on FBR's Active Taxpayer List	Technical Bid	Yes <input type="checkbox"/>	No <input type="checkbox"/>
Duly signed and stamped Annexure-A (Un-priced)	Technical Bid	Yes <input type="checkbox"/>	No <input type="checkbox"/>
Duly filled, signed and stamped Annexure-B	Technical Bid	Yes <input type="checkbox"/>	No <input type="checkbox"/>
Duly filled, signed and stamped Annexure-D	Technical Bid	Yes <input type="checkbox"/>	No <input type="checkbox"/>
Duly filled, signed and stamped Annexure-L on Company's Letterhead	Technical Bid	Yes <input type="checkbox"/>	No <input type="checkbox"/>
Duly signed and stamped Annexure-M on Company's Letterhead	Technical Bid	Yes <input type="checkbox"/>	No <input type="checkbox"/>
Duly signed and stamped Annexure-N on Non-Judicial Stamp Paper duly attested by Notary Public	Technical Bid	Yes <input type="checkbox"/>	No <input type="checkbox"/>
Duly filled, signed and stamped Annexure-A (Priced)	Financial Bid	Yes <input type="checkbox"/>	No <input type="checkbox"/>
Duly filled, signed and stamped Annexure-C	Financial Bid	Yes <input type="checkbox"/>	No <input type="checkbox"/>
Duly filled, signed and stamped Annexure-E	Financial Bid	Yes <input type="checkbox"/>	No <input type="checkbox"/>

TERMS OF REFERENCE:

1. All the specifications / dimensions should be as per following drawings;

Equipment's Description	Drawing Nos.
Regeneration Gas Scrubber (V-9209)	165-8-MPV-001 165-8-MPV-002 165-8-MPV-003 165-8-MPV-004

2. Bidder review the tender drawings and submit the IFC drawing.
3. Material specifications: strictly as per drawing. Compliance of the material with NACE-MR-0175 (sour gas service).
4. Scrubber shall be furnished with internal cladding of 03 mm SS316L as per drawing 165-8-MPV-001.
5. Radiography: 100%
6. Applicable code:
 - API Specification 12J.
 - ASME Boiler and Pressure Vessel Code, Section VIII, Division I.
 - American Society for Testing and Materials (ASTM).
 - ASME IX, Welding and Brazing Qualifications.
 - ASME V, Non-Destructive Testing.
 - ASME II, Material Specifications.
 - ASME B16.5 - Pipe Flanges and Flanged Fittings.
 - ASME B31.8 Natural Gas Piping.
 - ASME B31.3 Liquid Piping.
 - ASME B16.20, Ring Joint Gaskets and Grooves for Steel Pipe Flanges.
 - N.A.C.E. Standard MR-0175 / ISO Standard 15156.
7. Only U-stamp authorized manufacturers will be considered for technical evaluation. Documents to be provided to prove validity.
8. U-stamping is required. All the scope of U-stamping i.e. Design Calculation, documentation, inspection etc will be in bidder scope.
9. Bidder should have experience of 05 years (2011~2016) for fabrication of high pressure vessels and must submit a list of his clients to whom equipment of similar nature has been supplied most recently also attach the previous purchase orders of last 05 years with technical bid.

10. Previous Experience of SS316 internal Cladded Vessel supplied of equipment in last five years. Separate list of internally cladded equipments should be attached with the bid, if not provided with the bid cannot be further evaluated.
11. Material should be of American / European / Japanese origin (valid with ISO 9001 certifications) and MTC to be provided during fabrication phase.
12. Stage inspections will be carried out at manufacturer site by OGDCL representative(s) and bidder will inform to OGDCL, at following stages;
 - a) After shipment of material.
 - b) During Manufacturing.
 - c) Hydro testing of equipment.
 - d) Before shipment after paint.
13. All the BOQ mentioned in the drawing is included in the scope of work / supply.
14. Demister Pad / other internals shall be provided with one set as spare.
15. Man-way, Inlet & Outlet Flange Gaskets with **one set spare** should be provided.
16. Bidder will supply all studs with following specifications;
 - a) Stud with 02 Nuts, Stud: SA193 (B7) Nuts: A194 (2H), Flouropolymer coated.
17. Guarantee / warrantee for the equipment for a period of 01 year after being taken into service or 18 months after shipment, whichever completes earlier.
18. Packaging and shipment procedures. Shipment in bidder scope.
19. Execution Plan of Project should be submitted.
20. Delivery period: 6 months after issuance of LPO.
21. Payment will be after Delivery at Qadirpur Store.
22. All the above terms & conditions should be clearly confirmed in technical bid and any non-compliance with the above terms and conditions should not acceptable.

62



Zishan Engineers (Pvt.) Ltd.

An ISO 9001-2015 certified company,
47/F, Block 6, PECHS, Karachi-Pakistan
Tel: (92-21) 34393045-48 & 34310151-54
Fax: (92-21) 34533430 & 34310156
E-mail : contact@zishanengineers.com.
Web : www.zishanengineers.com

Document No.	165-8-DSM-001
Revision	A
Date	12-01-2018
Total Pages (inc front cover)	2



OIL & GAS DEVELOPMENT COMPANY LTD.



MATERIAL SELECTION OF REGEN GAS SCRUBBER AND IN / OUT LINES FOR QADIRPUR GAS FIELD, GHOTKI, SINDH, PAKISTAN

DATASHEET FOR MIST ELIMINATOR (DEMISTER)

ISSUED FOR REVIEW

Rev.	Date	Description	Prepared By	Checked By	Approved By
A	12-01-2018	Issued for Review	MA/ RA	RA	MM

61

Consultant		Data Sheet		
 ZISHAN ENGINEERS (PVT.) LTD.	Mist Eliminator (Demister)			
	Document No.	Revision	DATE	
Client		165-8-DSM-001	A	12-01-2018
 OIL & GAS DEVELOPMENT COMPANY LTD.	Prepared By	Checked By	Approved By	SHEET
	MA/ RA	RA	MM	2 OF 2

1 Existing Details	
2 Size / Dia (mm) :	694 mm (Cladded Shell ID of the Vessel)
3 Thk (mm) :	150 mm (Mist Pad)
4 Segments (nos) :	VTS
5 Equivalent Style (if any) :	VTS
6 Bulk Density (kg/m ³) :	VTS
7 Wire Dia. (mm) :	VTS
8 Grids (top & bottom) Type :	VTS (See note-1)
9 Type of Bolting arrangement (if any) :	VTS (See note-1)
10 Process Description	
11 Process Details :	HC Gas comes in the regeneration gas scrubber and then routed toward Compressor, this gas contains 300 ppm H ₂ S and approx 6 to 7 Mol% CO ₂ . The required demister is to be installed in the scrubber.
12 Type of application :	Regeneration gas scrubber/ Compressor Suction KOD
14 Operating pressure (Psig.) :	400- 750
15 Operating temperature (deg.F) :	136
16 Max Gas / Vapor flow rate (MMSCFD/ kg/hr) :	15.5/ 15,320
17 Min Gas / Vapor flow rate (MMSCFD/ kg/hr) :	4.65/ 4,596
18 Molecular weight of Gas / Vapor :	19.85
19 Gas density (kg/m ³) :	41.89
20 Gas viscosity (C.P.) :	0.014
21 Droplet size (microns) at outlet of :	less than 10 microns
22 Liquid density (kg/m ³) :	632
23 Liquid viscosity (C.P.) :	0.18
24 Dissolved solid contents :	
25 Suspended solid contents :	Nil
26 Desired Performance	
27 Allowable Pressure Drop across Demister Pad (mmWC) :	200
28 Desired Separation Efficiency :	99.99 % droplet removal efficiency for droplets sizes of 10 microns and larger
29 Vessel Details	
30 Vessel or Duct containing Demister existing / to be planned, horizontal / vertical, please state: Diameter / Size of Demister location - height available below & above the Demister	Please see attached DWGs.
31 Installation : Through full Demister open end / through the manhole, please state: the location & size of manhole	Mist Pad will be installed by removing vessel top flange, also see attached DWGs.
32 Material Details	
33 Material of construction for mesh pad :	Mesh Wire material should be SS 316
34 Material of construction for grids/bolts :	SS 316

Notes:

- Please see attached Vessel GA drawings (165-8-MPV-001, Rev.0, 165-8-MPV-002, Rev.0, 165-8-MPV-003, Rev.0 & 165-8-MPV-004, Rev.0).
- The knitted mistmat shall have a free volume of at least 97 % (e = 0.97), a wire thickness, dw, between 0.23 mm and 0.28mm.
- The specific surface wire area = 4(1 - e)/dw and should be greater than 428 m²/m³
- The mistmat shall have a turndown ratio upto 30% of total inlet capacity.
- VTS- Vendor to Specify
- Gas composition for inlet of demister is given below

Composition	Mole fraction
Methane	0.8003
Ethane	0.0105
Propane	0.0024
i-Butane	0.0006
n-Butane	0.0006
i-Pentane	0.0002
n-Pentane	0.0002
n-Hexane	0.0074
n-Heptane	0.0000
CO ₂	0.0575 to 0.07
H ₂ S	0.0003
Nitrogen	0.1147
H ₂ O	0.0053

M. Ahsan Waqar Khan
11/16/18

M. AHSAN WAQAR KHAN
Jr. Engr.(Mech.) P&P-S (A)
Ext: 2684