PETROCHEMICAL INDUSTRIES DESIGN & ENGINEERING CO. PROJ. NO. : 1182	mg engineering Lurgi PROJ.NO: 1.69690-10-GEM	2nd ZAGROS MEGAMETHANOL PROJECT **COVER SHEET**	OWNER : ZAGROS PETROCHEMICAL COMPANY (ZPC) PROJ. NO. : 232000

REQUISITION FOR : **CONTROL VALVES**	ALWAYS REFER TO THIS NUMBER **P-1182-REQ-IN-644**	**1**
	REQUISITION NO.	REV
INQUIRY □ PURCHASE ORDER ■	SHEET 1 OF 9	

This Purchase Requisition is issued to obtain quotaion for design and supply of :

CONTROL VALVES

as per this Requisition and its attachments.

REQUISITION CONTENTS	**No. OF SHEETS**
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REV.	DATE	DESCRIPTION	PREPARED	APPROVED	PROJECT
1	**2.12.04**	**FOR PURCHASING(SIGNED LETTER OF CONFORMITY AND CERTIFICATE OF ORIGIN)**	**S.E.H**	**S.Ehtemam**	**M.Masoudi**
0	**12.06.2004**	**FOR PURCHASING**	**Sh.Madani**	**S.Ehtemam**	**M.Masoudi**

1. SCOPE OF WORK

Vendor's scope of work includes but not limited to the following items with requirements stated in the requisition and all its attachments.

1.1 GENERAL

MAIN QUOTATION	OPTIONS	
■	□	1.1.1 Design & Engineering
■	□	1.1.2 Fabrication /Manufacturing
■	□	1.1.3 Assembly
■	□	1.1.4 Shop test and inspection
■	□	1.1.5 Painting
■	□	1.1.6 Packing
■	□	1.1.7 Marking
■	□	1.1.8 Mechanical guarantee(as per terms and conditions)
■	□	1.1.9 Performance guarantee(as per terms and conditions)

2. SCOPE OF SUPPLY

Vendor's scope of supply shall include but not limited to the followings with all accessories and as required according to this requisition, its attachments and references :

2.1 GENERAL

MAIN QUOTATION	OPTIONS		
■	□	2.1.1	Items and quantities as stated in the material summary list .
■	□	2.1.2	Spare parts for pre-commissioning and commissioning.
□	■	2.1.3	Spare parts for two years operation
■	□	2.1.4	Special calibration tools (if any)
■	□	2.1.5	Test equipment (during shop test)
■	□	2.1.6	Name Plate (s)
■	□	2.1.7	Documents as per the attached RFD (requirements for documents) form
■	□	2.1.8	Quality Dossier

2.2 MATERIAL SUMMARY LIST

SER NO	ITEM NO.	ITEM DESCRIPTION	QUANTITY	UNIT (m/kg/set/...)
1		CONTROL VALVES AND ACCESSORIES (AS PER DATA SHEETS)	102	SET
2		COMMISSIONING SPARES	AS PER ATTACH. NO. 6	

NOTES :

3. REQUISITION NOTES

3.1 The maximum consideration shall be given to minimize the types and models of the used CONTROL VALVE in order to reduce the total amount of spare parts and to ensure that wearing parts of all components are, as far as practicable, interchangeable.

3.2 The valves shall operate without excessive vibration and noise. They shall render possible stable control over the entire flow range.

3.3 CONTROL valves shall be provided and installed so that removal of the valve internal components is possible with the valve in situation.

3.4 All valves shall be capable of being repacked without disassembling the valve body.

3.5 Valves shall be of the quick renewable trim design wherever practicable.

3.6 Vendor shall furnish final sizing and calculation sheet for all control valves and state clearly the recovery factor and characteristic that used in his calculation.

3.7 Each control valves shall be sized by the vendor for the operating conditions stated in the valve data sheets. Vendor shall also take into account the effects of viscosity and pipe reducers on valve sizing.

3.8 Vendor shall evaluate each valve for flashing, cavitation and predicted noise level based upon ISA recommended formula and calculation methods. Vendor shall furnish the results of the evaluation and make recommendation to eliminate or reduce the effects of the undesirable operating conditions.

3.9 When used on “sour “ fluid services control valve material heat treatments shall be in accordance with NACE MR-0175 (Wherever specified on data sheets)

3.10 Vendor shall furnish all relevant accessories that specified in the data sheet of CONTROL valves. Accessories shall be assembled together in such a way that detaching be possible with minimum fitting disconnection (e.g. bolting of solenoid valve /.. to actuator casing isn't permitted).

3.11 Vendor shall provide relevant documentation including dimension drawing, weights, installation manual, complete part list, size, type, serial number of relevant equipment, specification sheet.

3.12 Vendor shall evaluate each valve for any predicted noise level based upon ISA recommended formula and calculation methods. Vendor shall furnish the results of the evaluation.

If the noise level, generated by an operating valve (measured 1 meter down stream of the valve within 1 meter radially from the pipe outside diameter), exceed 85 decibels (dBA), vendor shall inform the PIDEC and make recommendation to reduce the noise level. No external reducing devices are acceptable unless otherwise vendor specified on the Instrument data sheets.

3.13 Vendor to include full documentation for clears indication of noise reduction procedure.

3.14 Vendor shall submit final drawings for each CONTROL valve, which shall specially include the following:

a) Face to Face dimensions of the valve

b) Height of the completely assembled valve

c) Dimensions of clearance space required for maintenance work

d) Weight of the completely assembled valve

e) Location of external supports for vibration, in case, they are required.

3.15 All valves shall be designed to fail in a safe position as specified on the instrument data sheets upon loss of air supply to the actuator or Positioner.

3.16 CONTROL VALVE position shall be indicated on a scale mounted on the actuator.

3.17 Valve actuators shall be sized to fully stroke the valve based upon a 4.0 barg minimum instrument air supply.

3.18 Vendor shall test each valve to check that the valve actuator, and accessories are properly adjusted for that the valve operates and seats properly.

3.19 Seat leakage tests shall be in accordance with ANSI B 16.104/FCI 70-2

3.20 Vendor shall consider the following points:

Tube dimensions	1/4 "
Tube material and fitting	Stainless steel
Tube connection	Tapered compression fitting

Standard gas condition is pressure 1.013 bara and temperature 15 °C.
Minimum instrument air pressure is 7.5 bara @ AMB temperature.
Mechanical design of instrument air pressure is 11.5 bara @ 65 °C.

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3.21 Vendor shall provide pneumatic loop for satisfying fail safe by using volume tank and air lock (where applicable)

3.22 Electrical classification for limit switches, proximity type, and solenoid valves shall be as per intrinsically safe EEXia IIC T4 and weather proof to IP-65.

3.23 Electrical classification for smart positioners (HART / FF) shall be as per intrinsically safe EEXia IIC T4 or better certificate for intrinsically safe and weather proof IP-65.

3.24 Vendor has to check the specified “type of valve“ in respect of economic and process condition reason and where applicable to change the other valve (e.g. globe to other types).

3.25 Vendor shall select the best trim material in respect of process condition service and valve condition (minimum material has been stated in relevant data sheet).

3.26 Vendor shall select the best packing in respect of process condition service and temperature condition.

3.27 When used on “sour “ fluid services CONTROL VALVE material heat treatments shall be in accordance with NACE MR-0175 (specify on data sheet).

3.28 For insulation thickness of codes are:
P: personal protection
H: heat conservation
N: not insulated

3.29 Flange face finishes that specified in the data sheets shall be as follows:

Smooth: 125-250 μin AARH Max.
Serrated: According TO MSS-SP-06

3.30 Vendor shall provide WITNESS HYDROSTATIC test for all valves with class 300# and larger.

3.31 Vendor shall provide WITNESS HYSTERESIS test for all globe valves.

3.32 In all oxygen services all materials must be approved for the given operating conditions and all gaskets and other non-metallic materials in contact with oxygen must be certified by an official organization. Vendor to show his experience and qualification with reference from existing plants. Also a special cleaning procedure shall be existed at manufacturer workshop.The integrity shall be respected during transport.

3.33 All solenoids shall be 24 VDC ,intrinsically safe to EExia IIC T4 and weather proof to IP-65.

3.34 Vendor shall provide two (2) separate entries for each proximity switch's contact due to the need of sending valve position to both of ESD & FCS systems (if specified).

3.35 For all oxygen services the required closing time (<2 seconds) shall be included in the construction detail.

3.36 Spring return piston actuator as specified in the data sheets preferred, but if vendor select double actuating piston because of high torque etc. complete pneumatic loop arrangements including all accessories shall be quoted.

3.37 All FF positioners shall meet the requirements of FISCO power supplies.

3.38 The minimum rating shall be 300 # for valves up to 6" and including 6", unless service requirements, material, pressure, maximum temperature or piping design demand up-grading of the valve rating. For sizes over 6", valve rating shall follow piping material specification of the relevant pipe class.

3.39 Painting procedure shall be based on point 5 of material standard specification "P-MSS-IN-605/REV.1".

3.40 Vendor shall state the correct spary nozzles position for following valves:

-FV-150725,FV-150610,FV-150630,FV-150636,FV-101432,FV-101433, FV-101435

4. LIST OF ATTACHMENTS

SER NO.	DESCRIPTION	DOCUMENT NO.	REV.	No. OF SHEETS
1	Instruction for technical bids	-	1	2
2	Letter Of Conformity	-	1	1
3	“Certificate of Origin” Form	-	1	1
4	Requirement For Documents (RFD)	-	1	3
5	Scope Of Inspection	-	1	1
6	Spare Part list forms	-	1	2
7	Spare part list and interchangeability record (SPIR)	-	1	2
8	Requirements For Electrical Certifications	-	1	1
9	Ambient and Site Condition and Utility Data	P-ESS-PR-101	1	16
10	Units of measurement	P-ESS-PR-102	0	4
11	Data sheets for CONTROL VALVES	P-1182-DSH-IN-644	1	103
12	Specifications	P-MSS-IN 605	1	19