中海油石化工程有限公司 CNOOC Petrochemical Engineering Co.,Ltd.	**MATERIAL REQUISITION FOR CONTROL VALVE(GENERAL)**	Owner Doc.No.	CMIT-240048-728-INS-15.21-0003	
		Job's Doc. No.	253001D0728IN00017	
		Phase	Detailed Design	
		Rev.	0	Page 1 of 29
Company:	CMIT CNOOC IRAQ LIMITED			
Project:	FQN NEW DEGASSING STATION UPGRADING PROJECT			
Unit.:	FQN DEGASSING STATION			
Contract No.:	CMIT-PRT-10.53-240048			

INS

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Approved by: Ji An X.

CNOOC Missan Oilfield		
Approval Code	☑ Here	Remarks
Code A	✓	Approved
Code B		With Minor Comments: Revise and Resubmit, Works may proceed
Code C		With Major Comments: Revise and Resubmit, Works may NOT proceed
Code D		Reference and Information only
Chen Huanli	Chen Huanli	24 Aug 2025
Approval Authority	Signature	Date
Any comments made do not relieve the Contractor/ Vendor and/ or their sub-contractors of their responsibilities to meet the requirements of the Contract.		

0	Issued for Construction	Qi Changyong	Li Haiqin	Ji Anxia		20250818
A	Issued for Review	Qi Changyong	Li Haiqin	Ji Anxia		20250805
Rev.	Description	PRED.	CHKD.	APPR.		Date

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1 GENERAL

MISSAN Oil Field is located in the SE of Iraq, close to Iran's border, about 175 km N-NW of BASRA City, and 350 km SE of Baghdad – the capital of Iraq.

MISSAN Oil Field includes three producing fields namely Abu GHIRAB, BUZURGAN and FAUQI. Abu GHIRAB and FAUQI fields extend beyond the Iranian border.

Since MISSAN Oil Field was built in 1976, it has suffered from the Iran-Iraq War and the Iraq War, so a lot of facilities needs to be upgraded and revamped.

The intended Project is mainly concerned for establishing and upgrading of the FQN New Degassing Station Upgrade.

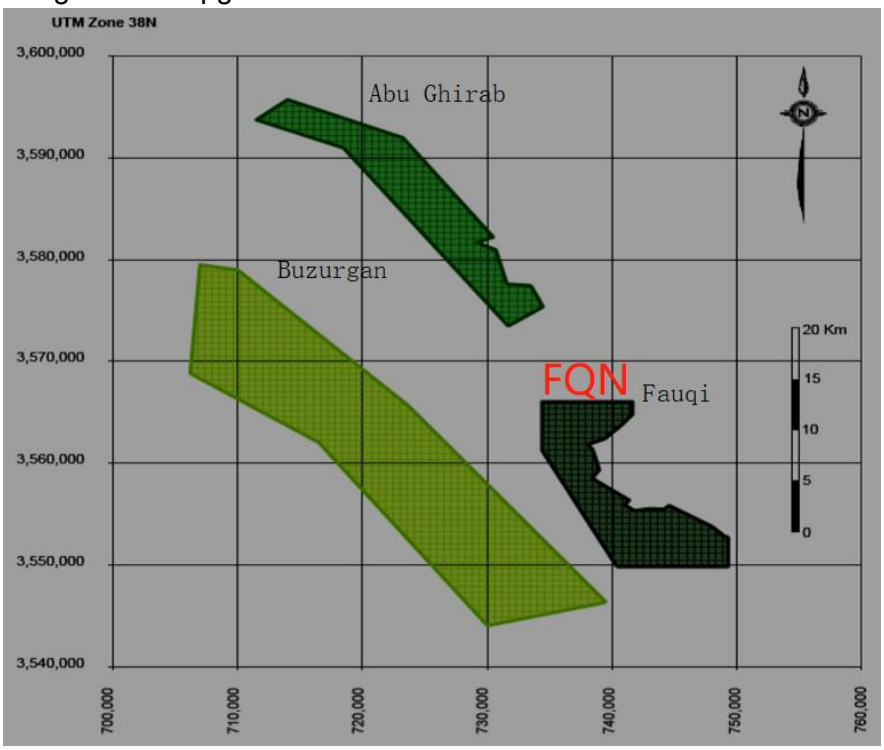

Figure 1.1-1 The overall MISSAN Oil Field

1.1 Degassing Station

The FQN degassing station was built in 1976,the crude oil with gas and water was sent to the DS, the main target for DS is to separate the gas and water from crude oil, and to entirely test/meter each individual well from well pad. Separated Liquid and Gas are exported via individual Trunkline(s) to the BUT CPF located in Buzurgan Area for further processing and treatment.

Due to the increase of liquid form the well, the existing facilities of FQN can not meet the requirement, so two Crude Processing Trains, 50 Kbbl/d plus 20% (each), will be added in FQN degassing station,and other Utilities and Auxiliary Supporting Systems will be added too.

1.2 Purpose

This Material Requisition is for the Control Valve (complete assembly of valve body, actuator and other accessories as one package) for FQN NEW DEGASSING STATION UPGRADING PROJECT.

This document should be read in conjunction with the technical requirements specified in related PROJECT specifications, codes and standards and drawings etc.If there are conflicts, strict requirements shall prevail.

This Material Requisition together with the referenced specifications and datasheets, describes the minimum requirements for design, materials, manufacture, inspection and testing, supply, installation and site service of the relevant actuator and valve and the relevant piping, accessories etc as a package.

VENDOR's work shall comply with the requirements of relevant standards and this document, and ensure the Sub-vendor's work also comply with the requirements of relevant standards and this document. VENDOR takes full responsibility for the Control Valve.

Compliance with the requirements of this requisition or any of the documents referred to herein shall not relieve the supplier of his responsibility to supply equipment of proper design, workmanship and materials conforming to good engineering practice to meet the specified conditions.

Certain requirements for properly functioning that are not included in this document are also subject to this requisition.

VENDOR shall provide an itemized list of any comments or exceptions to the specification and its attachments. Only those comments/exceptions which are accepted by CONTRACTOR will be incorporated into the requisition at the time of the order.

All the inspection, witness, review activities of CONTRACTOR and COMPANY should implement under the Contract SOW.

1.3 Definitions

The following definitions shall apply to this document:

COMPANY: CNOOC IRAQ LIMITED

PMC: Project Management Consultant

CONTRACTOR: CNOOC Petrochemical Engineering Co.,Ltd (COPCL or CNOOCPEC)

VENDOR/SUBCONTRACTOR: The party to the contract and/or purchase order which has undertaken the obligation to supply the goods and/or services which are ordered and specified herein.

DGS or **DS**: Degassing Station

BUT: BUZURGAN CPF Terminal

WORK: The work, tasks, and works to be performed by the EPCC Contractor (Purchaser), as specified in or inferred from the Contract, in particular from the Scope of Work.

ITP: Inspection and Testing Plan

TPI: Third party Inspection Agency

SHALL: Mandatory in relation to the requirement of this document

SHOULD: Strong recommendation to comply with the requirement of this document

1.4 Site & process conditions

All field instruments shall be suitable for installation in the climatic conditions. The project will be designed for minimum life duration of 25 years. All electronic parts subject to dust, moisture, fungus growth, or insect attack shall be treated with suitable coating to inhibit such attack.The following are the climatic conditions for all equipment and facilities.

Item	Unit	Value
Altitude	m ASL	4~24
Atmospheric Pressure	kPa	102
Maximum Temperature Daily	°C	55 (July - Hottest Month)
Wet Ball Temperature	°C	22.2
Dry Bulb Temperature	°C	42.2 (GPSA 11-3b)
Minimum Temperature Daily	°C	-5 (January - Coldest Month)

Maximum Design Metal Temperature	°C	80
Maximum Wind Speed	m/s	42
Prevailing Wind Direction	Winter/Summer	NW–SE
Maximum Relative Humidity	%	80
Minimum Relative Humidity	%	25
Maximum Rainfall	mm/d	50
Average Annual Rainfall	mm/a	200
Rain Interval	–	November ~ March
Under Ground Temperature	°C	15 in Winter (1.2-1.6m) 33.6 in Summer (1m)
Seismic Zone	–	2B
Earthquake Parameters	Site Class	As per Geotechnical Investigation Reports, to be developed by EPCC Contractor
	Site Zone	
	Peak Ground Acceleration (PGA)	
Average Annual Evaporation Rate	mm/a	3054.4
Soil Bearing Capacity	ton/m^2	Refer to the Soil Reports
Soil Characteristics	–	Top soil is brown, firm to stiff, interstratified clay containing iron oxide and frequently intervened by black spots of organic matter arid plant roots, (Soil is stilt corrosive). Underlying layer is also clay extending to an average depth of 15.0m. Refer to Soil Geotechnical Reports for clarified soil properties.

1.5 Spare Parts and Consumables

Vendor shall provide comprehensive lists of spare parts for commissioning and start-up,critical spares for two-year operation.

Spare parts are generally categorized as:

1) Commissioning/start-up spares (start-up spares).

2) Two years' continuous operation and maintenance spares (2 years spares) in SPIR form.

Commissioning/start-up spares parts and two-year operation spare parts shall be supplied with the equipment.

For Commissioning/start-up spares, below quantities shall be considered at least:

Item	Description	Unit	QTY.
1	Packing	set	10% for each size and each type
2	Gasket	set	10% for each size and each type

For two-years' operation spare parts, below quantities shall be considered:

Item	Description	Unit	QTY.
1	Position Transducer	set	One(1) sets for each Specification
2	Valve Positioner	set	One(1) sets for each Specification
3	Solenoid Valve	set	Two(2) sets for each Specification
4	Limit Switch	set	Two(2) sets for each Specification
5	Packing	set	Six(6) sets for each Specification
6	Control Valve Repair Kit	set	One(1) sets for each Specification

2 STANDARDS CODES AND SPECIFICATIONS

2.1 General

All referenced international codes and standards and attached technical documents including specifications, data sheets etc. form a part of this MR and shall be followed for all the scope of supply specified in this Material Requisition.

The latest editions and revisions of following Codes, Standards and Specifications will be used for the design, construction, inspection and testing, delivery and proper functioning.

Vendor shall meet or exceed the requirements of the following codes, regulations and standards, or equivalent except as superseded herein. In case where more than one code, regulation or standard apply to the same condition, the most stringent shall be followed. All specifications and publications shall be the current issue on the date.

2.2 International Codes and Standards

- American Society of Mechanical Engineers (ASME)

  B16.5 Pipe Flanges and Flanged Fittings (NPS 1/2 through NPS 24 Metric/Inch Standard)

  B16.10 Face-to-face and End-To-End Dimensions of Valves

  B16.34 Valves - Flanged, Threaded and Welding End

B16.47 Large Diameter Steel Flanges: NPS 26 Through NPS 60 Metric/Inch Standard

B46.1 Surface Texture (Surface Roughness, Waviness, and Lay)

- American Petroleum Institute (API)

RP-550 Classification of Locations for Electrical Installations at Petroleum Facilities Classified as Class 1, Division 1 and Division 2

- British Standards (BS)

6121 Mechanical cable glands

6755-1 Specification for production pressure testing requirements

6755-2 Specification for fire type testing requirements

- EEC Regulations

89/336/EEC(2)(1989) Electromagnetic Compatibility Regulations

92/31/EEC(1992) Electromagnetic(Amendments)Regulations

- Fluid Control Institute (FCI)

70.2 Control valve seat leakage

- International Electro-technical Commission (IEC)

60079 Electrical Apparatus for Explosive Gas Atmospheres

60529 Degrees of protection provided by enclosures(IP Code)

60534-8-3 Industrial-process control valves – Part 8-3: Noise considerations – Control valve aerodynamic noise prediction method

61000-4-3 Electromagnetic compatibility (EMC)-Part 4-3: Testing and measurement techniques-Radiated, radiofrequency,electromagnetic field immunity test

61000-4-4 Electromagnetic compatibility (EMC)-Part 4-4: Testing and measurement techniques-Electrical fast transient/burst immunity test

- NACE

MR0175/ISO15156 Petroleum and natural gas industries-Materials for use in H_2Scontaining Environments in oil and gas production

- International Organisation for Standardisation (ISO)

  5208 Industrial valves — Pressure testing of metallic valves

  9000 Quality management systems – Fundamentals and vocabulary

  9001 Quality management systems - Requirements

  9002 Quality Systems - Model for Quality Assurance in Production, Installation and Servicing

- Instrument Society of America (ISA)

  75.01.1 Flow equations for sizing control valves Control Valve-Practical Guides for Measurement and Control

2.3 Applicable Project Documents

The technical documents listed in ATTACHMENT-A Technical Documents / Drawings including project specifications, data sheets shall be complied with.

2.4 Precedence order

In case of conflict for any requirements, the order of precedence shall be as follow:

- Iraqi Laws and Regulations
- Latest International Codes and Standards
- Project referenced Specifications

In the event of any conflict of data or requirement in any of the above documents, it is the Vendor's responsibility to resolve these conflicts and obtain written approval from CONTRACTOR and COMPANY before proceeding with design, manufacture or purchase. In any case the most stringent requirement shall prevail.

2.5 Language and Unit

The governing language shall be English language. All notices, correspondence, information, literature, data, manuals and other documents required under the Contract shall be in the English language.

Technical units, quantities, etc. shall be expressed, used and abbreviated according to the SI system. Preferred units of measure are as for:

Quantity	Unit Name	Nation Standard
Length	Meter	m
Area	Square meter	m^2
Volume	Cubic meter	m^3
Mass	Kilogram	kg
Time	Second/hour	s/h
Electric current	Ampere	A
Electric potential EMF	Volt	V
Temperature	Celsius	℃
Amount of substance	Mole	mol
Pressure	Megapascal	MPa
Capacity	Cubic meter/hour	m^3/h
Density	Kilogram/ cubic meter	kg/m^3
Power	Kilowatt	kW

3 SCOPES OF WORK

3.1 General

VENDOR's scope of supply includes design, engineering, procurement, manufacture, inspection and testing, supply, equipment integrity and performance guarantee of the Control Valve as outlined in the attached data sheet, technical documents and as further described in this material requisition.

Vendor shall supply the Control Valve including but not be limited to the following:

- Process and Mechanical Design / Engineering.
- Valves and accessories as stated in the purchase order.
- Data sheets and sizing calculations.
- All hazardous area certificates and SIL certificates etc as applicable.
- Material certificates.
- Design, manufacture, testing.
- All external attachments such as supports, pipe supports, lifting lugs.

- Spreader bar for handling and transportation.
- Stainless steel name plate.
- Supply of surge protection device for all transmitters.
- All necessary special tools for installation and maintenance of the valve.
- Inspection and Test plan.
- Factory Acceptance Test (FAT) at Vendor's works site, FAT shall be inspected by a third party that has been approved by company.
- Inspection & Testing including hydro testing (and drying afterwards).
- Actuator functional test.
- Valve stroking time test.
- List of exceptions and non-compliance.
- Catalogue details of provided equipment.
- Manufactures Record Book and material certificates.
- Operation and Maintenance manuals.
- Safety Manual.
- Valve signatures for benchmarking valve performance.
- Painting, Packing, protection & preservation for transportation and storage.
- Weights and dimensions of cases for shipping.
- Warranty and guarantee.
- Factory Acceptance Test (FAT) and Site Acceptance Test (SAT).
- Spare parts as detailed in the purchase order.
- Special test equipment such as HART communicator.
- Recommendation of spares for 2 years continuous operation in the form of list.
- Vendor documentation as specified in Material Requisition ATTACHMENT-B VENDOR DOCUMENT REQUIREMENT LIST.
- Site supervision of installation and commissioning (per diem rate), if required.
- Claddings.

VENDOR has to provide detail QA/QC ITP.

CONTRACTOR/COMPANY may accept manufacturer's standard design, if found to be equivalent or superior to the requirements of Material Requisition.

VENDOR shall provide any material, equipment and any other accessory, over and above that specified herein, which is required to provide a safe, workable and efficient system. VENDOR is also required to provide guarantees as outlined in the Material requisition.

Project Specific Technical Requirements shall be referred to Attachment-A for project specific documents.

3.2 Engineering Service

VENDOR shall provide engineering services, which shall include, but not necessarily be limited to, the following:

- Providing/coordinating detailed design of all equipment and components within the scope of supply.
- Resolving engineering queries related to the equipment and components within the scope of supply.
- Ensuring that all equipment and components supplied meet the requirement of this document and the datasheet, specifications, standards and codes detailed therein.
- Performing and coordinating all aspects of design.
- Providing all documentation, drawings, loads, calculations, analysis, design/production schedules, sub-vendor details etc. for CONTRACTOR and COMPANY's review and approval.
- Providing progress reports etc.
- Providing expediting services for all sub-vendors.
- Providing quality assurance for all sub-vendors with respect to ISO 9000.
- Quality Assurance

3.3 Engineering Requirements

The productions shall meet the requirements in SPEC and requirements in attachment data sheet & documents. VENDOR shall provide the whole integrated Control Valve including actuator, valve body, handwheel, positioner, filter, piping and accessories etc.

VENDOR must consider the sour service according with the provided data, complying with NACE-MR0175 when selecting the materials. Any deviations from our data sheets and specification etc. must be reviewed and approved by CONTRACTOR and COMPANY. Any conflicts or contradictions in the relevant documents and standards must be reviewed and approved by the company in order that VENDOR can continue designing and relevant working. All the instrumentation valves must be provided with the sizing calculation reports.

All the instrumentation valves must be provided with the actuator sizing calculation reports.

VENDOR shall be responsible for all the installation and adjusting of the whole valve in order to provide the integrity device. CONTRACTOR and COMPANY shall not participate in any

assembling or adjusting. The valves must be provided with the supporting equipment in order to install easily.

Some special material's mating flange and accessory such as "diffuser", "wafer", multilevel union, extended bolt etc shall be provided by VENDOR, VENDOR should notice the data sheet's notes.

The valves shall be as package, CONTRACTOR shall only be responsible for mating flanges, fastening bolts, nuts, gaskets for process connection and all the others are VENDOR's scope of work. The valve, actuator and other accessories shall be assembled before shipment.

4 QUALITY ASSURANCE, INSPECTION AND TESTING

4.1 Quality Assurance

VENDOR shall maintain and use a Quality System which is based on ISO 9001 to control the work. If VENDOR selects sub-contracts for part of the work, he shall ensure that only those Sub-Vendors or suppliers are used who can demonstrate that they operate Quality Systems based on ISO 9001 or ISO 9002 as applicable. The Sub-Vendors shall be selected based on the CONTRACTOR approved vendor list. VENDOR shall give his Sub-Vendors or suppliers assistance in attaining the required standard, if necessary. This shall not relieve the VENDOR of his responsibility for the quality of the finished work.

VENDOR shall provide the QA/QC procedure and CONTRACTOR reserve the right to audit the Vendor's Quality System.

VENDOR shall assign sufficient full time personnel to the project to ensure the Quality Assurance / Quality Control System, documented in a Quality Assurance / Control Manual, is maintained and kept up-to-date throughout the duration of any purchase order. VENDOR's Quality Assurance / Control System shall become an integral part of any purchase order. VENDOR shall organize a prefabrication / inspection meeting with CONTRACTOR.

VENDOR shall provide daily, weekly and monthly reports on material procurement and manufacturing, and regularly provide quality inspection reports.

VENDOR shall provide manufacturing data book for reviewing as per CONTRACTOR's and COMPANY's Notice.

Prior to the start of valve manufacture, an (Inspection and Test Plan) ITP shall be submitted for approval by COMPANY.

4.2 Inspection and Testing

The inspection requirements shall be in accordance with the ATTACHMENT-D included in this requisition.

VENDOR shall be responsible for establishing a detailed inspection and testing schedule with CONTRACTOR and COMPANY. Inspection will be performed and witnessed by CONTRACTOR and COMPANY. VENDOR shall submit the Inspection and Test Plan (ITP) for CONTRACTOR's and COMPANY's approval.

The responsibility for quality control and inspection rests with the vendor, however, CONTRACTOR and COMPANY may inspect the materials, fabrication, assembly and testing of the equipment during all phases of the work.

Inspection and testing shall be done by Vendor and some tests will be witnessed by CONTRACTOR and COMPANY or his representatives as deemed necessary.

VENDOR shall permit CONTRACTOR's Inspector to have unrestricted access to all areas of vendor's facilities, including subvendor's facilities where any phase of the work covered by this specification is being performed.

VENDOR shall refer all questions relating to quality control, testing, and an acceptance of the work to CONTRACTOR's Inspector.

CONTRACTOR and COMPANY reserves the right to inspect the Control Valve (package) to relevant factory at any time and any case. VENDOR can't reject this inspection by any reasons. COMPANY, at its discretion, may additionally nominate authorized inspection agency. The responsibility for inspection, certification, etc. of all materials, parts etc. lies with the VENDOR.

VENDOR shall specify all of the inspection and testing requirements in the quality plan which shall identify the activities requiring the CONTRACTOR's and COMPANY's approval, review, witnessing etc.

The Vendor in presence of Third Party Inspection Agency and / or COMPANY shall conduct a Factory Acceptance Test/ Performance Test. The test procedures and conditions shall be prior approved by CONTRACTOR and COMPANY to verify the performance of this unit.

All equipment shall be inspected for compliance with:

- Requirements of the CONTRACTOR's and COMPANY's specification and correspondence thereafter.
- Applicable Codes, standards and specifications, which shall also include sub referenced standards therein.
- Test and Inspection Plans produced by VENDOR.

Inspectors have the right to request additional inspections or tests to ensure that the equipment complies with this requisition and all relevant codes and standards.

All equipment shall be presented for inspection in an unpainted state except for the final inspection. All instruments and other equipment necessary for testing shall be supplied by VENDOR and the same shall be checked and certified by the CONTRACTOR's and COMPANY's inspector.

Any defects found by CONTRACTOR's and COMPANY's appointed Inspector shall be rectified in his presence. Where this is not possible or practical, check lists shall be prepared and signed by COMPANY's or COMPANY's Inspector stating all "pending items". Copies of these lists shall be sent to the COMPANY to enable their subsequent checking. Mill and shop inspection shall not relieve the Vendor from his contractual responsibility for replacing any defective material and for repairing any defective workmanship that may be discovered in the field.

VENDOR shall be responsible for coordinating the inspection and testing of sub-vendor supplied equipment, and for ensuring that the COMPANY's representatives are given the necessary access for inspection, and adequate warning of inspection and tests.

CONTRACTOR and COMPANY shall be given minimum of fifteen (15) calendar days notice prior to the carrying-out of any tests on the equipment covered by this requisition.

VENDOR (and all sub-Vendors) shall give the CONTRACTOR and COMPANY, without charge, all reasonable facilities and access for the purpose of inspecting the equipment to ensure that it is manufactured in accordance with the Specification.

All spare parts shall be subjected to the same inspection standards and full material certification as the main order.

The equipment shall not leave the VENDOR's factory before all discovered defects have been rectified and without the written permission of the CONTRACTOR and COMPANY.

Any acceptance or release of equipment following an inspection or test activity shall in no way relieve the Vendor of his responsibility to provide guarantees as to the suitability of the materials, workmanship and performance of the equipment in accordance with this requisition.

All the inspect, witness, review activities of CONTRACTOR and COMPANY should implement under the contract.

5 GUARANTEE & WARRANTY

The Warranty Period shall be for eighteen (18) calendar months accounted from one (1) day after the date of issuance of the last System/Facility Provisional Acceptance Certificate by the Company to the EPCC Contractor, or thirty six (36) calendar months accounted from delivering the products to the appoint site.The earlier date shall be taken as the Warranty Period expiry date.

VENDOR shall guarantee the process performance and mechanical design of all instruments, valves and associated accessories supplied under this requisition when operated at the conditions specified herein. VENDOR shall specifically state the limits in the process guarantee, in terms of variance from design composition, in his proposal. The guarantee will include the following essential elements as a minimum:

- All the valves shall meet the stated product quality specifications.
- All the valves shall have a capacity equal to the design throughput as a minimum.
- All the valves shall meet the utility consumption rates as specified by the Vendor in Technical proposal.
- All the valves shall meet the required Noise levels.
- VENDOR shall bear any cost by on for any required modifications or additions to correct any deficiencies.

VENDOR shall warrant the equipment to be free of defects in material and workmanship, and that it is of adequate size and capacity to fulfill the design and operating conditions specified herein. VENDOR shall replace and install any materials, supplies or equipment which fails under design conditions due to defects in material or workmanship. If a defect is observed and/or such failure occurs within Warranty Period, VENDOR shall replace and install without any additional cost to CONTRACTOR and COMPANY any materials, supplies or equipment involved. Acceptance of this order will signify acceptance of all conditions of this guarantee.

According to Iraq laws the manufacture/supplier shall make registration at Iraq authorities concerned of the equipments and instruments supplied and shall get individual licenses from them.

6 VENDOR DATA REQUIREMENTS

6.1 General

Following paragraphs describes the requirement for the quality assurance documents that Vendor shall furnish to the Company.

The documents required in this Procedural Aid forms part of vendor Scope of Supply and therefore subjects to all contractual obligations.

The Vendor documents shall be split into three (3) main headings as follows:

- Installation, Operating and Maintenance Manual;
- Design Data Manual;
- Quality Assurance Manual.

6.2 Requirements for vendor documents

6.2.1 Format

All documents shall be in one of the following formats, as requested by the Company;

- A0 (1189mm x 841mm)
- A1 (841mm x 594mm)
- A2 (594mm x 420mm)
- A3 (420mm x 297mm)
- A4 (297mm x 210mm)

6.2.2 Binding of final Documents

The documentation shall be bound in hard plastic-coated binders of A4 format size.

Binders shall be of standard size, 3-ring box file type.

Documents whose size is larger than A4 shall be folded into A4 and held with plastic film holder as inserts of individual binder in such a way that title block of the document can be easily found.

Documents collected in the Manual shall be sized maximum A3 and folded into A4.

6.2.3 Soft copy of final Document

PDF format with bookmark can be acceptable.

6.2.4 Document Numbering System

The Vendor shall follow the Numbering System prepared by the EPCC Contractor, in manner in line with the Company Numbering Procedure/System, and approved by the Company.

6.2.5 Title Blocks

Each document shall have a title block shows, at least, the following information:

- Company/EPCC Contractor Logos;
- Document Serial Number;
- Company/EPCC Contractor Purchase Order No. or Requisition No.;
- Company/EPCC Contractor Job Number;
- Document's Date and Revision Number;
- Document's Purpose of Issue and Revision;
- Document's Title, including the Contract Title;
- Project Title;
- Signatures/Initials of the Persons who Drafted, Checked and Approved the Document.

6.2.6 Revisions

Revisions shall be clearly identified on all documents and modified portions of documents shall clearly be outlined (clouded).

6.2.7 Language

All documents shall be in English Language Only, where using of any other language will obscure the document overall view.

6.2.8 List of Drawings and Documents

All documents shall be implied in the Log List that shall allow for keep-tracking of the various issues and revisions of the implied documents.

The Document Log List shall periodically, on time specified by COMPANY/CONTRACTOR or as requested by either of both, be updated with new list revision.

6.2.9 Units

Metric system (S.I.) shall be used except otherwise specifically requested by COMPANY/CONTRACTOR.

6.2.10 Writing

All writing shall use the printed letters with a minimum height of 3mm.

6.2.11 Recommendation for Software

Word processing software, such as Word TM, Word Perfect TM, for word file and Latest version Auto CADTM or special software derived from Auto CADTM for drawing file is acceptable to be used.

6.2.12 Company/EPCC Contractor Approval

The Company/EPCC Contractor Approval shall not in any case relieve Vendor from his obligation to execute the Contract in accordance with its terms.

The Company/EPCC Contractor failure to comment or only partially comment any document shall not be construed as an acceptance/approval of the content of the document.

6.2.13 Third Party Certification

Vendor shall obtain the certificate for Packages issued by a Certifying Authority according to certification category of the Packages specified by the Company Specifications.

The certificates shall be submitted for the Company Approval.

The certificates shall be held in a plastic film holder and attached in the first page of the QA Dossier.

Certification Cost shall be bear by Vendor.

6.2.14 Document Quantity and Submittal

Vendor shall submit as applicable to the specific equipment the documents listed in Appendix B VENDOR DOCUMENT REQUIREMENT LIST as minimum requirement. Further documents/data might be requested by the Company as needed.

Appendix B is intended to be applicable for all equipment and material in this contract.

The document's title listed in Appendix B might not be the exact/precise title, however, the title reflects the intent of the sought document.

Document quantity and submittal time shall be as follows:

- Weekly Report: Weekly;
- Monthly Report: Monthly;
- The exact quantity and submittal date of the others documents/data as shown in Appendix BVENDOR DOCUMENT REQUIREMENT LIST;
- Final Documentation: two (2) hard-copy-sets and two (2) soft-copy in flash-memory shall be submitted with shipment.
- Final Documentation: four (4) sets hard-copy-sets and four (4) soft-copy in flash-memory shall be submitted within two (2) weeks after Package delivery.

6.3 Design data manual

6.3.1 Scope

The Design Data Manual shall be a bound compilation of Vendor and Sub-Vendors equipment drawings and data that Vendor is required to furnish as a ready reference to all equipment and Packages. It is intended that the bound volumes of the Design Data Manual shall assist in the initial start-up of the equipment and aid Company personnel in subsequent operation and maintenance. It shall also provide information necessary for future check of equipment performance or for planning of equipment expansion or redesign.

The Vendor shall provide the detailed data of all equipment, which includes Equipment Tag Number, Equipment designation, classification, manufacturer, model design parameter, operation condition, performance parameter, material dimension and weight etc.

6.3.2 Design Data Manual Contents

The content of the Design Data Manual shall be:

- Company/Contractor Purchase Order key pages(and Vendor sub-orders);
- Material and equipment requisition, data sheet and/or particular specification related to the purchase order;
- Vendor and Sub-Vendor As-Built drawings, special construction details, electrical wiring and connection diagrams, photocopy of equipment name plates, Vendors brochures, etc.;
- Test and calculated performance data and/or engineering data sheets;
- All Drawings and Calculations;
- Complete parts list and sectional drawings with parts identification numbers;
- Brand name, nomenclatures and brand identification numbers for all parts used by the manufacturer to complete the equipment.

6.4 Quality assurance manual

6.4.1 Scope

All documents required in this Dossier form part of the supply and are therefore subject to all contractual obligations.

The documents required are those specified within each particular specification as per Appendix B VENDOR DOCUMENT REQUIREMENT LIST.

The Quality Assurance Dossier shall be a bound compilation of following documents:

- Calculation Reports;
- Factory Acceptance Test Procedures;
- Test reports.

All Certification Authority documents received by the Company/EPCC Contractor (if any) will be directed to Vendor in due time in order to be incorporated in this Manual.

The Vendor/EPCC Contractor shall provide the Company with all drawings (quality control drawings) such as structural and piping shop drawings for example marked-up with welding identifications, and material certificates numbers.

6.4.2 Content of Quality Assurance Dossier

- Material Certificates;
- Hydrotest Certificates;
- Manufacturer's Quality Control Report.
- Manufacturer's Data Reports and Calculation Reports;
- Test Reports;
- As-Built Drawings (as required).

7 INSTALLATION, START-UP, COMMISSIONING AND PROVISIONS OF TRAINING

7.1 Spare Parts

VENDOR shall provide a comprehensive listing of spare parts recommendations covering Start-Up, Commissioning and two (2) years of Continuous Plant Operation etc. VENDOR is responsible for the quantity and type of spare parts for two (2) years.

Vendor shall provide spare parts in accordance with EPC Contractor's requirements stipulated in project specifications. The Spare Parts Interchangeability Record (SPIR) shall be completed by the vendor, and approved by the EPC Contractor and Company, within four (4) weeks from the PO ISSUED.Please see the Spare Parts and Interchangeability Record (SPIR) (ATTACHMENT-E).

7.2 Operations, Maintenance, Commissioning and Training Manuals

Vendor shall provide necessary supports during operation and maintenance, include but not limited that spare parts provision, operation parameters suggestion, maintenance, troubleshooting and repairing support.

VENDOR shall provide Operations, Maintenance, Commissioning and Training Manuals separately.

VENDOR shall also be responsible for providing other training aids such as videos for operator training. Training will be provided in English Language.

7.3 Installation, Start-up and Commissioning Support

VENDOR shall provide a list of all materials and respective quantities required for the start-up, run in and for two-year operation.

VENDOR shall be responsible for providing Start-Up and Commissioning Support at site, which shall be commenced as per Company's notice. Vendor shall specify free site-service period. Service beyond free site-service period due to Company's reasons shall be reimbursed at fixed rates agreed by Company and Vendor. The Vendor shall provide the site rates in its Bid in conformity in Attachment-C hereinafter, which shall include number and a list of personnel of services and a description of all work to be performed.

Provision Acceptance Certificate will be issued by Company to Vendor after 72 hours' consecutive successful commercial operation.

7.4 Operator Training

VENDOR shall be responsible to provide professional train about installation, startup, operations and maintenance. All the training activities shall be recorded.

VENDOR shall provide all materials including any videos necessary to adequately train the Company's personnel to operate and maintain the equipment supplied by the Vendor. Vendor's training personnel shall be qualified with related working experience of no less than ten (10) years.

VENDOR shall provide onsite Operator Training on a per diem basis plus expenses, which will be reimbursed at cost. VENDOR shall provide the said rates in its Bid in conformity in Attachment-C hereinafter, which shall include number and a list of personnel of services and a description of all work to be performed. Vendor shall propose training period.

8 PREPARATION OF EQUIPMENT FOR SHIPMENT

Preparation of the valves for shipment is a crucial step in the completion of this contract. The vendor must take into considerations that all valves itself shall be prepared for ocean shipment and storage for extended periods outside in an ocean environment. Care must be taken to protect the valves from external attack by the elements and from the impact of moisture and humidity on the equipment. Bolts shall be galvanized before any rust preventive is applied.

It is likely that a certain amount of disassembly will be required for shipment including some of the mechanical components and some instrumentation. VENDOR shall provide very specific detailed instructions for reassembling the components and must assume that those doing the reassemble of the components will be unskilled. If in the VENDOR's opinion the reassembling cannot be completed by unskilled labor then VENDOR must include in its proposal for the services of its own skilled personnel to go to the site and supervise or undertake the reassembling and verification that the equipment is suitable for operation.

8.1 Packing

The Vendor shall provide the packing method and obtain the approval from EPC Contractor & Company.The Vendor shall ensure that the way of packing is suitable for sea & inland road transportation and take protective measures such as moisture-proof, shock-proof, rustproof and anti-corrosion.The packing should protect the cargo, of which the vulnerable parts that are afraid of bumps should be specially protected.The packing should be well marked with shipping marks, center of gravity, lifting points and other storage & transportation signs.Each packing box shall be numbered, and if the components to be assembled on site, it shall be numbered. VENDOR shall provide specific detailed installation instructions and drawings.

8.2 Transportation

The Vendor shall delivery the cargo to the designated collection point required by the EPC Contractor and the packing, measurement and weight of the cargo should conform to the requirements of sea transportation and Iraqi inland road transportation.

The Vendor shall explain to the EPC Contractor and Company the special matters needed to be paid attention to during transportation to ensure the safety of the cargo delivery.

8.3 Storage at site

The Vendor shall provide the storage requirements for the storage site and cargo protection. If there are special requirements for storage against wind, sand, sun and rain, the cargo shall take corresponding protective measures before leaving the factory. The storage shall be in accordance with CMIT-240048-728-EQP-15.03-0008 SPECIFICATION for WORKSITE STORAGE and EQUIPMENT PROTECTION.

ATTACHMENT-A TECHNICAL DOCUMENTS / DRAWINGS

DOCUMENT NO.	DOCUMENT/ATTACHMENT TITLE
Data Sheet	
CMIT-240048-728-INS-15.17-1007	DATA SHEET FOR CONTROL VALVE(OIL AND GAS SYSTEM)
Specifications	
CMIT-240048-728-INS-15.03-0001	INSTRUMENT GENERAL SPECIFICATION(GENERAL)
CMIT-240048-728-INS-15.03-0004	SPECIFICATION FOR PROCESS CONTROL VALVES(GENERAL)
CMIT-240048-728-PIP-15.03-3001	SPECIFICATION FOR PROCESS PIPING MATERIALS
CMIT-240048-728-PIP-15.03-3002	SPECIFICATION FOR MANUAL VALVES
CMIT-240048-728-EQP-15.03-0007	SPECIFICATION FOR PROTECTION OF GOODS DURING SHIPMENT
CMIT-240048-728-EQP-15.03-0008	SPECIFICATION for WORKSITE STORAGE and EQUIPMENT PROTECTION

ATTACHMENT-B VENDOR DOCUMENT REQUIREMENT LIST

DOCUMENT	WITH PROPOSAL	A (NOTE 1) SUBMIT FOR COMMENT	B (NOTE 2) DATE OF SUBMITTAL	C (NOTE 3) FINAL DOCUMENTS (HARD/SOFT COPY)
QUALITY ASSURANCE DOSSIER				
Quality Manual		I	2	×
Quality Plan	×	×	2	×
Project Execution Plan(If Any)	×	×	2	×
Master Schedule	×	×	2	×
Document Index	×	×	2	×
Monthly Reports (submitted on time each month)			In due time	
Closeout Report(If Any)				×
Records				×
Change Order (If Any)				×
Minutes of Meeting or MEMO (If Any)				×
FAX (If Any)				×
DESIGN DATA MANUAL				
Package Guarantee (This sheet shall be plastically coated and the first page behind table of contents in this Manual)		×	4B	×
Completed Data Sheets (The data sheets which is part of **Purchase Order** specifications must be completed as per actual supplied Package)	×	×	6	×
Copy of Nameplate		×	4B	×
Performance Data (such as performance curve, capacity, processing quality, energy loss, etc.)		×	6	×
Outline Drawings (with dimensions of length, width and height, and including layout of Package components, lifting points, area and access required for operating and replacement)		×	5	×
Assembly Drawings (including information for Company to position the whole Package, to weld or bolt the baseplate, to make simple mechanic and electrical connections, and to install accessories, in addition to that information necessary for Package components assembly)		×	5	×
Calculation Sheets (for checks of pressure drops, stress and deflection, and supports, etc.)		×	8	×
Materials Lists (related to pipes, fittings, connections, insulations, etc.)		I	10	×
Noise and Vibration Data		×	10	×
Instrument Data Sheets (such as level, pressure, temperature, valves, indicators, measuring		×	8	×

DOCUMENT	WITH PROPOSAL	A (NOTE 1) SUBMIT FOR COMMENT	B (NOTE 2) DATE OF SUBMITTAL	C (NOTE 3) FINAL DOCUMENTS (HARD/SOFT COPY)
devices, detectors, regulators, analyzer, transducers, transmitter, etc.)				
Calculation Sheets (including Control Valves, etc.)		×	5	×
Instruments List (with certificates required)		×	10	×
SPARE PARTS LIST				
Start-Up, Commissioning and two (2) years of Continuous Plant Operation etc.		×	10	×
The Spare Parts Interchangeability Record (SPIR)		×	10	×
QUALITY ASSURANCE DOSSIER				
PACKAGES				
Package Certificate (This certificate issued by a certification agency shall be plastically coated and put in the first page behind the table of content in the Dossier)		I	2B	×
As-Built Drawings (including all disciplines as built drawings related to the Package, as built drawings collected in the Dossier shall be sized A3)				×
Calculation Sheets (all disciplines as built drawings related to the Package)				×
Data Sheets (including all disciplines as built data sheets related to the Package)				×
MATERIALS				
Material List				×
Mill Certificates and Testing Records (including chemical analysis and mechanical properties, etc.)		I	14	×
INSTRUMENTS				
Instrument Components Data Sheets				×
Instrument Components Certificates and Testing Records				×
RECORDS				
Data Sheets				×
Certificates and Testing Records				×
Final Dimension Reports		I	2B	×
Casting Material Specifications		×	14	×
Casting Inspection Records and Reports				×
Inspections In-Process Records				×
Heat Treatment Records				×

DOCUMENT	WITH PROPOSAL	A (NOTE 1) SUBMIT FOR COMMENT	B (NOTE 2) DATE OF SUBMITTAL	C (NOTE 3) FINAL DOCUMENTS (HARD/SOFT COPY)
Painting and Repairing Procedure		×	16	×
Surface Preparation and Painting Records				×
Paints Certificates and Testing Records				×
Hydrostatic Testing				×
Cleaning, Hydrostatic Testing and Drying Procedure		×	14	×
Hydrostatic Testing Records				×
Pre-Commissioning Procedure		×	8B	×
Check List for Pre-Commissioning		×	8B	×
Factory Performance Testing Records (such as performance curves, parameters, capacities, etc.)		×	2B	×
Factory Functional Testing Reports		×	2B	×
Inspection Release Note for Shipment(if any)	To request 4 weeks before shipment			×
Shipment Documents (such as packing list, liner data, estimate arrival date, etc.)(if any)		×	2B	×

NOTE 1: "**I**" means for information, "×" means must be submitted on time.
NOTE 2: The figure means within weeks after PURCHASE ORDER signed, the figure suffixed with "B" means ahead weeks before shipment.
NOTE 3: 2 sets hard/soft copies along with shipment, 4 sets delivery to Company after Package delivery.

ATTACHMENT-C SITE SERVICE RATE TABLE

The following cost shall be reimbursed by Contractor for Vendor's personnel to perform installation/erection supervision, commissioning and/or training.

MAN-HOUR RATES

Service Description	No.	Personnel Category	Working Time	Rates (US/d)		Remarks
				Normal	Overtime	
Site Service			To specify free site service period			
Training			To specify proposed training period.			

Note: Rates for site service specified in the Table shall be only applicable for site service beyond free site-service period due to Company's reasons.

ATTACHMENT-D TPI PLAN FOR MATERIAL AND EQUIPMENT

Below is a list of the Equipment and Materials that shall, as a minimum, be subjected to TPI(Third-Party-Inspection). The Vendor shall provide a detailed inspection and test plan (ITP) that includes third-party inspection (TPI) for all components to the EPC Contractor and the Company for review and approval after the contract is awarded.

No.	Material/Equipment	Inspection Activity (1)	Remark
1	Valves	Hydro test/leakage test, dimensional inspection, packaging	Witness by TPI
2	Actuator	Functional test,stroking time test,dimensional inspection,packaging	Witness by TPI

Tests/Inspections mentioned herein are the minimum where all Tests/Inspections stated as per applied Code/Standard shall be implemented and endorsed by the appointed TPI.

All equipment and materials MUST have TPI reports and certificates stating their compliance and acceptance of the stipulated targets and the project's specifications and requirements.

ATTACHMENT-E SPARE PARTS AND INTERCHANGEABILITY RECORD

SPARE PARTS AND INTERCHANGEABILITY RECORD

EQUIPMENT NAME:	18		
EQUIPMENT MANUFACTURER:	19A		
SUPPLIER NAME:	19B		
SUPPLIER CONTACT NUMBER:	19C		
SUPPLIER ADDRESS:	19D		

Equipment No. (Tag Item No.)

Manufacturer's Model No.

Manufacturer's Serial No.

NOTES:
A - SUPPLIER SHALL RETURN A COMPLETED COPY OF THIS SPREADSHEET TOGETHER WITH:
- SECTION DRAWING(S) AND LIST OF PARTS SHOWING ALL PARTS NAMED IN COLUMN 8 FOR PROPER IDENTIFICATION.
B - SUPPLIER SHALL COMPLETE ALL COLUMNS 1 - 19D.

No. of units: 5

NUMBER OF PARTS PER UNIT

SPIR LINE NO.	Units of Measure	Total No. of Identical Parts on this SPIR	DESCRIPTION OF PART	Drawing References	PART POSITION (REFERENCE) No.	SUPPLIER/PACKAGER PART NUMBER	MANUFACTURER NAME (BUY-OUT SUPPLIER NAME)	MANUFACTURER NUMBER (BUY-OUT SUPPLIER NUMBER)	MATERIAL SPEC	CATALOG NO. (ITEM CODE)	SHIPMENT IN WEEKS	CURRENCY	UNIT PRICE	TOTAL PRICE	Validity of Price Quote
6	6A	7	8	9	9A	10A	10B	10C	11	12	13	14	15	16	17
1															
2															
3															
4															
5															
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