

	<p>نگهداشت و افزایش تولید میدان نفتی بینک سطح الارض</p> <p>احداث ردیف تراکم گاز در ایستگاه جمع آوری بینک</p>																									
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طرح نگهداشت و افزایش تولید ۲۷ مخزن

PMR FOR INSTRUMENT/PLANT AIR & NITROGEN PACKAGES

نگهداشت و افزایش تولید میدان نفتی بینک

D04	OCT. 2023	IFI	H.Ghadyani	M.Fakharian	S.Faramarzpour	
D03	AUG. 2023	IFI	H.Ghadyani	M.Fakharian	A.M.Mohseni	
D02	FEB. 2023	IFI	H. Adineh	M.Fakharian	M.Mehrshad	
D01	NOV. 2022	IFI	H. Adineh	M.Fakharian	M.Mehrshad	
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Rev.	Date	Purpose of Issue/Status	Prepared by:	Checked by:	Approved by:	CLIENT Approval

Class: 3

CLIENT Doc. Number: F0Z-709227

Status:

IDC: Inter-Discipline Check
 IFC: Issued For Comment
 IFA: Issued For Approval
 AFD: Approved For Design
 AFC: Approved For Construction
 AFP: Approved For Purchase
 AFQ: Approved For Quotation
 IFI: Issued For Information
 AB-R: As-Built for CLIENT Review
 AB-A: As-Built –Approved

	<p>نگهداشت و افزایش تولید میدان نفتی بینک سطح الارض</p> <p>احداث ردیف تراکم گاز در ایستگاه جمع آوری بینک</p>																									
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1.0 INTRODUCTION

Binak oilfield in Bushehr province is a part of the southern oilfields of Iran, is located 20 km northwest of Genaveh city.

With the aim of increasing production of oil from Binak oilfield, an EPC/EPD Project has been defined by NIOC/NISOC and awarded to Petro Iran Development Company (PEDCO). Also PEDCO (as General Contractor) has assigned the EPC-packages of the Project to "Hirgan Energy - Design and Inspection" JV.

As a part of the Project, a New Gas Compressor Station (adjacent to existing Binak GCS) shall be constructed to gather of 15 MMSCFD (approx.) associated gases and compress & transfer them to Siahmakan GIS.

GENERAL DEFINITION

The following terms shall be used in this document.

CLIENT:	National Iranian South Oilfields Company (NISOC)
PROJECT:	Binak Oilfield Development – Surface Facilities; New Gas Compressor Station
EPD/EPC CONTRACTOR (GC):	Petro Iran Development Company (PEDCO)
EPC CONTRACTOR:	Joint Venture of : Hirgan Energy – Design & Inspection (D&I) Companies
VENDOR:	The firm or person who will fabricate the equipment or material.
EXECUTOR:	Executor is the party which carries out all or part of construction and/or commissioning for the project.
THIRD PARTY INSPECTOR (TPI):	The firm appointed by EPD/EPC CONTRACTOR (GC) and approved by CLIENT (in writing) for the inspection of goods.
SHALL:	Is used where a provision is mandatory.
SHOULD:	Is used where a provision is advisory only.
WILL:	Is normally used in connection with the action by CLIENT rather than by an EPC/EPD CONTRACTOR, supplier or VENDOR.
MAY:	Is used where a provision is completely discretionary.

 NISOC	<p>نگهداشت و افزایش تولید میدان نفتی بینک سطح الارض</p> <p>احداث ردیف تراکم گاز در ایستگاه جمع آوری بینک</p>								
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2.0 GENERAL

- This document presents the item material requisitions for Contractor's use as appropriate.
- This material requisition covers the requirements for the design, manufacturing, testing and supply of air compressor & dryer packages as listed below. All equipment/devices/items shall conform to this requisition and all specifications which have been mentioned in attachment 1 of this material requisition.
- The vendor's supply shall include:

No.	Item	Description	Total QTY.
1	PK-C-2203 A/B	Air Compressor Packages	2(1+1)
2	PK-DR-2203 A/B	Air Dryer Packages	2(1+1)
3	PK-G-2204	Nitrogen Package	1
4	PK-C-2204	Air Compressor for N2 Package	1

3.0 REFERENCE / ATTACHED DOCUMENTS

- Specified documents in attachment 1 shall be considered as a part of this material Requisition.
- All codes and standards which have been referenced in above mentioned specs shall be considered.
- In case of any conflict between the contents of this document or any discrepancy between this document and other project documents or reference standards, this issue must be reported to the CLIENT. The final decision in this situation will be made by CLIENT.
- Deviations

Any exceptions/clarifications to codes/standards and specifications listed in attachment 1 must be clearly stated in a separate dedicated section of the proposal in the format submitted in attachment 3.

The proposed deviations/comments list shall include as minimum:

- Reference for the involved specification, chapter and paragraph.
- Technical justification for the non-compliance.
- Detailed description of the proposed alternative.

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If no exceptions or clarifications exist, either for the complete referenced document or an individual paragraph, the supplier shall be considered to be in full compliance with the relevant document.

The supplier may propose materials of equivalent or better quality compared to those indicated in the equipment data sheet. Even these cases shall be duly included/technically supported in the deviations/clarifications list.

4.0 SUBJECT OF THE SUPPLY

The supplier shall supply air compressor & dryer packages that completely assembled and tested. The scope of supply is detailed at para. 5. The supplier shall include in the supply, all other equipment/devices/items not listed in the following, but necessary for a good design and a safe operation, taking into account process data and installation conditions such as area classification and climatic conditions.

The grade of shop assembly of the equipment/devices/items supplied shall be at maximum extent to facilitate site erection and pre-commissioning activities.

5.0 LIMITS OF SUPPLY

5.1 SCOPE OF SUPPLY

5.1.1 MAIN DESCRIPTION

❖ For the Air Compressors:

- Complete set of oil free screw compressor including control system, MCC, compressor element, air cooling system, lube oil system, cooling fan, electrical motor, separator system, control valves
- Electrical motor:
 - On-skid cabling, tray and fittings
 - Anti-condensation heaters for motor
 - Outdoor MCC for Auxiliaries Electrical Load (if any)
- Coupling (dry flexible Spacer with Non sparking guard)
- Common baseplate for driver and compressor

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- Foundation bolts (anchor bolt), skid leveling screws, shims, sub-plates
- Inlet filter (auto cleaning type)
- Inlet silencer
- Inlet IGV
- Inter-stage air cooler
- Inter-stage water separator and water trap
- After cooler (Air cooler)
- Outlet water separator (at downstream of after cooler) with water trap
- Compressor auxiliary equipment
- Blow off silencer
- Outlet FT for surge control
- PSV at discharge of each compressor
- All required instrumentations for safe operation of compressors
- Instrumentation, wiring & control within baseplates including junction box
- PLC based UCPs (one for each compressor) shall be considered to be mounted in control room and each of them had ability as selective master logic controller of complete air package (VTA). UCPs shall be connected to the PCS, ESD, for required monitoring, control functions and shutdowns as per P&ID. UCP panel door mounted HMI shall including alarm, trip and interlock logic annunciator lamp and buzzer (if any). LCP for local command is required for each compressor. SIL rated loops for safety and trip commands shall be considered. Lap top for engineering and maintenance and all original software and licences shall be prepared by vendor.
- All piping interconnections
- Manifoldd single connections at the edge of skid for utility connections & drain and vent connections
- Relevant equipment for compressor control and safety.
- PT,TT & FT on common discharge header of compressors for load sharing and load management
- PDT for inlet Air Filters
- LT for water separators
- PT& TT for inlet and out let of each stage of compressor



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- First filling of consumables such as lube oil and ... is in vendor scope of supply
- All transmitters shall transferred to DCS for operator monitoring purpose
- Package running status /common alarms/faults to be transferred to DCS from UCP by MODBUS RTU
- Anti-surge controller for each compressor shall be considered.
- Surge drum
- Spare compressor shall be provided.
- Acoustic Enclosure (If required)
- Two earthing bars
- Lifting lugs for four points for each baseplate
- Sand blast & painting
- Special tools for erection and maintenance
- Thermal insulation (if needed)
- Name plates
- Spare Parts for erection, pre-commissioning, commissioning and start up and two years operation.
- Capital spare parts (as option)
- Any other items not listed above which are necessary for satisfactory design and operation of the pump shall be furnished by vendor

❖ For the Air Dryer Package:

- Air dryers beds (mole sieve adsorption type) (for each package one bed in adsorption and one bed in regeneration mode)
- Dual-pre-filters & dual-after-filters (Cartridge Element) with spares filters
- Silencer for air regeneration discharge line
- All required instrumentations for safe operation of compressors
- All piping interconnections
- Manual globe valve and FT for regeneration line
- Dew point meter at discharge of each air dryers(at downstream of after filters)
- PSV for each beds
- All required sequencing valves for adsorption and regeneration of beds

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- All transmitters shall transferred to DCS for operator monitoring purpose(if any)
- The life time of Air dryer's adsorbent shall be minimum 3 years
- Water trap for dual filters
- PDT for inlet and outlet filters and Air Dryer beds
- First filling of mole sieves are in vendor scope of supply All transmitters shall transferred to DCS for operator monitoring purpose
- Package running status /common alarms/faults to be transferred to DCS via Air compressor UCP. Standalone control panel (as minimum microprocessor based) located on **each** dryer skid for all required signaling, local logic, monitoring and etc. which shall be connected to control room mounted UCP of air compressor. **Selective** Master UCP of package shall allow each dryer to be worked as duty independent of compressor duty/standby selection.
- Automatic starting of standby Dryer in case of shutdown of running air dryer to be considered.
- Manual & automatic drains
- Common skid for all equipment in package
- Foundation bolts (anchor bolt), skid leveling screws, shims, sub-plates
- Instrumentation, wiring & control within baseplates including junction box
- Controls system including alarm, trip and interlock logic; annunciator lamp and buzzer; push button switches; Terminal box
- On-skid cabling, tray and fittings
- Anti-condensation heaters for motor
- Outdoor MCC for Auxiliaries Electrical Load (if any)
- Manifolded single connections at the edge of skid for utility connections & drain and vent connections
- Two earthing bars
- Lifting lugs for four points for each baseplate
- Sand blast & painting
- Special tools for erection and maintenance
- Name plates

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- Spare Parts for erection, pre-commissioning, commissioning and start up and two years operation.
- Capital spare parts (as option)
- Any other items not listed above which are necessary for satisfactory design and operation of the pump shall be furnished by vendor

❖ For the Nitrogen Package:

- Air K.O. drum
- Surge drum
- Air compressor
- Air cooler
- Inlet silencer
- Outlet water separator
- pressure swing adsorption system
- Chiller for cooling of inlet wet air(if required)
- Silencer for air regeneration discharge line
- Dual-pre-filters & dual-after-filters(Cartridge Element)
- N₂ Generator
- Dual Particulate Filters(Cartridge Element) (if required)
- O₂ analyzer at discharge of air N₂ Generator(at downstream of particulate filters)
- H₂O analyzer at discharge of air N₂ Generator(at downstream of particulate filters)
- PDI for Filters and beds
- UV (on-off valve) for temperature control, TT, check valve for Nitrogen Gaseous discharge line.
- All required TSV,PSV and on/off valves for gaseous nitrogen lines for safe operation
- Common skid for all equipment in package
- Foundation bolts (anchor bolt), skid leveling screws, shims, sub-plates
- Overall piping/tubing, valves and fittings within the package for complete operation
- Instrumentation, wiring & control within baseplates including junction box

	<p>نگهداشت و افزایش تولید میدان نفتی بینک سطح الارض</p> <p>احداث ردیف تراکم گاز در ایستگاه جمع آوری بینک</p>																									
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- A PLC based UCP mounted in control room for each Nitrogen package. UCP shall be connected to the PCS, ESD, for required monitoring, control functions and shutdowns as per P&ID. UCP panel door shall including alarm, trip and interlock logic; annunciator lamp and buzzer; push button switches; Terminal box, LCP for local command is required.
- On-skid cabling, tray and fittings
- Anti-condensation heaters for motor
- Outdoor MCC for Auxiliaries Electrical Load (if any)
- Manifoldd single connections at the edge of skid for utility connections & drain and vent connections
- Two earthing bars
- Lifting lugs for four points for each baseplate
- Sand blast & painting
- Special tools for erection and maintenance
- Name plates
- Spare Parts for erection, pre-commissioning, commissioning and start up and two years operation.
- Capital spare parts (as option)
- All requirements for safe and easy startup of package
- Any other items not listed above which are necessary for satisfactory design and operation of the pump shall be furnished by vendor

The supplier shall assume overall responsibility for the design, manufacture, assembly, test and performance of all equipment/devices/items supplied as indicated in this requisition. This shall include, but not be limited to:

- Resolve engineering issues relating to equipment/devices/items within the scope of supply.
- Provide detailed design and documentation of all equipment/devices/items and components within the scope of supply in accordance with attachment 2 of this document.
- Provide all necessary information documents in order to allow the contractor to erect, install and verify the proposed equipment/devices/items.

	<p>نگهداشت و افزایش تولید میدان نفتی بینک سطح الارض</p> <p>احداث ردیف تراکم گاز در ایستگاه جمع آوری بینک</p>							
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- Implement a quality assurance plan
- The quality plan applied to the scope of supply shall include:
 - QA/QC Organization Chart and procedures that shall be submitted for approval.
 - Plan for HOLD points in the production process proposed to PURCHASER for witness or approval particular activities.
 - Production schedule indicating main quality manufacturing processes, inspection and tests.
 - Qualification of all personnel performing tests to be reviewed by the inspector
 - Supplier shall also provide the description of the following quality activities:
 - Sub suppliers products quality
 - Quality check and identification of the materials and equipment entering in their manufacturing shop.
- Calibration of test instruments and equipment
- Provide detailed specifications and data sheets.

5.1.2 SPARE PARTS

Following items shall be considered (supplied) and included in the bid documentation:

- Spare parts for commissioning and start-up; a qualified and complete list based on PROJECT SPARE PART SUPPLY PROCEDURE (Doc. No. E&C-QC-SP-1).
- Spare parts for two years operation; a qualified and complete list based on PROJECT SPARE PART SUPPLY PROCEDURE (Doc. No. E&C-QC-SP-1).
- Capital spare parts (as option / if any)

5.1.3 OTHER ITEMS

- Special tools required for installation and maintenance including compressor internals dismantling cradle (a qualified and complete list has to be included in the bid documentation)
- Name plate
- Earthing plate
- Painting of all items in accordance with "Painting Specification".
- Preparation for shipment
- Packing for sea freight transportation

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- Stairs, ladders and walkways if required
- Shop inspections and testing as per specifications & data sheets
- Free access to manufacturing plants for the PURCHASER's inspectors
- Certificates or declarations of conformance (as required) of all Ex-equipment.
- Daily rate for erection supervision (separate price)
- Daily rate for commissioning and start-up supervision (separate price)
- Training for customer's personnel (separate price)
- KOM
- Technical/Clarification meeting
- Pre-Inspection Meeting

5.2 SCOPE OF WORK

- Engineering and Documentation
- Manufacturing and assembling
- Mechanical Guarantee
- Performance Guarantee
- Sub-Vendor Coordination
- Mounting of main driver and auxiliary driver on baseplate at shop
- Inspection and testing at shop
- Piping within the Package
- Painting
- Prime Coats at Shop
- Finish Coats at Shop
- Packing Preservation suitable for more than 18 months at outdoor conditions of the site environment
- Packing including suitable protection for both sea transport and road transport on rough tracks
- Rust prevention for long term (over 6 month)
- Shipping and transportation to point of delivery (according to delivery condition)
- Supervision for installation (Per diem rate and/or lump sum - as an option)

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- Supervision for erection, commissioning and start up (Per Diem rate and/or lump sum - as an option)
- Preparing of Final Book (Data Book)

5.3 EXCLUSIONS

The following items are excluded by the supplier scope of supply and will be provided by purchaser:

- Concrete foundation (which shall be anyway designed based on supplier's technical data)
- Instrument air supply
- Nitrogen supply (if any)
- Electrical supply
- Interconnecting power cables among each skid mounted terminal boxes and remote switch gear
- Interconnecting cabling, serial link, between the remotely mounted unit control panel and the process control system in the main control room
- Connection to plant earthing system
- Transport from receiving port to site
- Shelter for Package
- Site erection
- Lubricants (except first filling)

5.4 BATTERY LIMITS

The battery limits are summarized as follows:

- a) Process
 - Inlet and outlet flanges on skid
- b) Instrumentation and control
 - terminal strips inside junction boxes at skid edges
 - terminal strips inside unit control panel
 - terminal strips inside UCP for integrated safety system (ESD and F&G) connections
 - terminal strips inside UCP for IRP connections
 - MODBUS TCP/IP connections on modules

 NISOC	<p>نگهداشت و افزایش تولید میدان نفتی بینک سطح الارض</p> <p>احداث ردیف تراکم گاز در ایستگاه جمع آوری بینک</p>								
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- c) Electrical
 - Incoming Power Supply of Local MCC
 - Incoming Power Supply of AC or DC UPS (if Any)
 - Earth Bosses on Skids
- d) Vents and Drains
 - Drain flanges manifold
 - Outlet vent piping flanges

6.0 INSECTION AND TESTS

The equipment shall be inspected and tested in accordance with the Inspection & Test plan (ITP) issued by the vendor and approved by the CLIENT/EPC CONTRACTOR before the award of the order. The Inspection & Test plan (ITP) shall be at least according to the Commodity Procurement and Manufacturing Inspection Instruction (Docs .Nos. ICE-EID-MI-SP01-Rev01) , Inspection Level of Commodity and Equipment (Docs .Nos. ICE-EID-MI-SP02-Rev01) and Data Sheets. The vendor shall in any case conduct all the tests required by contractual documents, specifications, codes and standards, manufacturer standard quality system and keep the relevant documentation. All required manufacturing and function test/inspection also Factory Acceptance Test /Site Acceptance Test and Quality Assurance requirements shall be considered in vendor responsibility as per project specification.

7.0 VENDOR DOCUMENTATION REQUIREMENTS & SCHEDULE

- Vendor document shall be according to attachment 2 of this document.
- All documents, preliminary or final, are to be stamped and signed by the vendor.
- Failure in dispatch of the required documents shall cause the supply to be considered as unfulfilled.
- URCHASER's approval does not relieve vendor, in any way, from his obligation to fulfill the requirements of the purchase order documents.
- All vendor drawings and documents shall be in English language.
- ITP, QCP, MPS documents shall be presented at the PIM by vendor

All drawings and documents are to be identified as per clause 1 **"GENERAL DEFINITION"**

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8.0 UNIT RESPONSIBILITY

VENDOR shall be responsible for the design, engineering, co-ordination, supply, delivery, testing, final check-out and satisfactory operation of the equipment/devices/items. The engineering coordination also includes responsibility for handing and expediting drawings.

Also VENDOR shall be responsible for ensuring that all relevant information and documentation is passed on the sub-suppliers.

9.0 GUARANTEE AND WARRANTY

All material and Equipment/Devices/Items in VENDOR's scope of work/supply shall be guaranteed by VENDOR.

The guarantee period shall be eighteen (18) months from the date of delivery or twelve (12) months from the installation date of each equipment/packages at site

VENDOR shall guarantee the performance of supplied items (if any).

VENDOR shall guarantee that the Equipment/Device/Item is suitable for the operating conditions herein specified, and that all materials and components are free from any defects; verifications of all calculations are in VENDOR's responsibility.

VENDOR shall unconditionally guarantee the materials and workmanship of all material and/or services. If, within the guarantee period, any defects occur which are due to faulty material and/or services included in his scope (design, manufacturing, inspection, testing, supply & etc.), VENDOR shall, at his own expense, repair or adjust the condition, or replace the material and/or services to the complete satisfaction of CLIENT's representative. These repairs, replacement or adjustments shall be made only at such time as will be least detrimental to the operation of the CLIENT's business.

VENDOR warrants promptly repairing or replacing the defective parts in the warranty period.

Vendor shall ensure a correct and safe operation of the unit, providing all safety protection Devices.

Vendor shall be responsible for the safe, reliable, continuous functioning of the Equipment/Devices/Items.

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VENDOR is fully responsible for the design of package for correct and safe operation based on project requirement during package life time; therefore, VENDOR shall specify any documents/specifications which may be required for design, manufacture and finalizing of Equipment/Devices/Items to avoid any problems during the package operation at site before P.O; otherwise, VENDOR shall be hold responsible for any corresponding deviation from expectations from the Equipment/Devices/Items.

10.0 DEVIATION

VENDOR's proposal shall be prepared in strict compliance with the requirements set forth in the relevant specifications of tender documents.

VENDOR shall include in his proposal the statement of compliance with the tender documents should VENDOR wish to submit exception to the requirements of tender documents. They shall be submitted for PURCHASER's approval.

11.0 PRICE BREAKDOWN

Breakdown price of following items shall be included in the proposal, as well as total price.

- 1) Material and Fabrication for each Section Separately
- 2) Pre-commissioning & commissioning spare parts (E&C-QC-SP-1)
- 3) 2 years operational spare parts (E&C-QC-SP-1)
- 4) Packing & transportation
- 5) Other fee (if any)

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ATTACHMENT 1



11.1 LIST OF REFERENCE / APPLICABLE DOCUMENTS

No.	Document No.	Document Title	Rev.
Process			
1	Process Basis Of Design	BK-GNRAL-PEDCO-000-PR-DB-0001	D08
2	Process Design Criteria	BK-GNRAL-PEDCO-000-PR-DC-0001	D02
3	Symbol & Legend For PFD and P&ID	BK-GCS-PEDCO-120-PR-PI-0001	D04
4	P&ID - Instrument & Plant Air System	BK-GCS-PEDCO-120-PR-PI-0015	D07
5	P&ID - Nitrogen Generation System	BK-GCS-PEDCO-120-PR-PI-0016	D07
6	Duty Specification for Instrument/Plant Air & Nitrogen Packages	BK-GCS-PEDCO-120-PR-SP-0002	D05
Mechanical			
7	Mechanical Design Criteria	BK-GNRAL-PEDCO-000-ME-DC-0001	D04
8	Specification For Pressure Vessels	BK-GNRAL-PEDCO-000-ME-SP-0001	D03
9	Specification For Air Compressor Package	BK-GCS-PEDCO-120-ME-SP-0006	D05
10	Specification For Air Dryer Package	BK-GCS-PEDCO-120-ME-SP-0007	D02
11	Specification For Nitrogen Package	BK-GCS-PEDCO-120-ME-SP-0014	D05
12	Standard Detail Drawing For Pressure Vessels and Heat Exchangers	BK-GNRAL-PEDCO-000-ME-DW-0001	D02
Piping & Material			
13	Piping Design Criteria	BK-GNRAL-PEDCO-000-PI-DC-0001	D03
14	Piping Material Specification	BK-GCS-PEDCO-120-PI-SP-0001	D02
15	Specification for Painting	BK-GNRAL-PEDCO-000-PI-SP-0006	D04
16	Piping Corrosion Study & Material Selection Report	BK-GCS-PEDCO-120-PI-RT-0001	D04
17	Specification For Metallic Pipes	BK-GNRAL-PEDCO-000-PI-SP-0004	D06
18	Specification For Fittings, Flanges, Gaskets and Bolts	BK-GNRAL-PEDCO-000-PI-SP-0005	D02
19	Specification For Welding of Plant Piping System	BK-GNRAL-PEDCO-000-PI-SP-0011	D01
20	Specification For Manual Valves	BK-GNRAL-PEDCO-000-PI-SP-0009	D01
21	Unit Plot Plan Drawing	BK-GCS-PEDCO-120-PI-PY-0001	D04
22	Specification For the Design of Piping in Mechanical Package	BK-GNRAL-PEDCO-000-PI-SP-0003	D01
23	Specification For Lining (Internal Protection of Equipment by Painting)	BK-GNRAL-PEDCO-000-PI-SP-0007	D02
24	Specification For Piping Cleaning and Flushing	BK-GNRAL-PEDCO-000-PI-SP-0017	D03
25	NDT Plan For steel Structures	BK-GNRAL-PEDCO-000-QC-PR-0041	D00

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No.	Document No.	Document Title	Rev.
26	Specification For Material Requirements in Sour service	BK-GNRAL-PEDCO-000-PI-SP-0008	D01
27	Specification For Color Coding and Marking	BK-GNRAL-PEDCO-000-PI-SP-0001	D02
28	Specification For Plant Piping Systems Pressure Testing	BK-GNRAL-PEDCO-000-PI-SP-0010	D02
Structure			
29	Structural Design Criteria	BK-GNRAL-PEDCO-000-ST-DC-0001	D02
30	Specification For Concrete Work	BK-GNRAL-PEDCO-000-ST-SP-0001	D03
31	Standard Drawing For Anchor Bolts	BK-GNRAL-PEDCO-000-ST-DW-0002	D02
Control & Instrumentation			
32	Specification For Instrumentation	BK-GNRAL-PEDCO-000-IN-SP-0001	D04
33	Specification For Instrument and Control of package Unit System (PU)	BK-GNRAL-PEDCO-000-IN-SP-0004	D02
34	Specification For On-off /Shut Down Valves(ESDV/MOV)	BK-GNRAL-PEDCO-000-IN-SP-0006	D03
35	Specification For Pressure Safety Valves(PSV)	BK-GNRAL-PEDCO-000-IN-SP-0007	D04
36	Specification For Instrument/F&G Cables	BK-GNRAL-PEDCO-000-IN-SP-0010	D02
37	Specification For Control Valves	BK-GNRAL-PEDCO-000-IN-SP-0005	D03
38	Instrument Hook-Up Diagram	BK-GCS-PEDCO-120-IN-DG-0002	D03
Electrical			
39	Electrical System Design Criteria	BK-GNRAL-PEDCO-000-EL-DC-0001	D02
40	Specification For LV Switchgear & Motor Control Centers	BK-GNRAL-PEDCO-000-EL-SP-0001	D03
41	Specification For LV Induction Motors	BK-GNRAL-PEDCO-000-EL-SP-0010	D03
42	Specification For Electrical Requirements of Packaged Units	BK-GNRAL-PEDCO-000-EL-SP-0011	D03
43	Specification For Distribution & Lighting Panels	BK-GNRAL-PEDCO-000-EL-SP-0013	D03
44	Specification For Power & Control Cables	BK-GNRAL-PEDCO-000-EL-SP-0014	D03
45	Data Sheets For LV Induction Motors	BK-GCS-PEDCO-120-EL-DT-0008	D03
Safety & Fire Fighting			
46	Specification For Hazardous Area Classification	BK-GNRAL-PEDCO-000-SA-SP-0002	D03
47	Specification For passive Fire protection	BK-GNRAL-PEDCO-000-SA-SP-0007	D02
48	Hazardous Area Classification Layout	BK-GCS-PEDCO-120-SA-PY-0002	D00
General			
49	ICE-EID-MI-SP01-Rev01	دستورالعمل بازرسی، خرید و ساخت کالا	-
50	E&C-QC-SP-1	دستورالعمل تامین قطعات یدکی راه اندازی و راهبری دو سالانه	-

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No.	Document No.	Document Title	Rev.
51	ICE-EID-MI-SP02-REV-01	دستورالعمل انتخاب سطح بازرسی کالا و تجهیزات	D01
52	BK-GNRAL-PEDCO-000-QC-PR-0022	Specification For Final Data Book (FDB) Requirements	D00
53	BK-GNRAL-PEDCO-000-QC-PR-0045	Packing, Marking, Transportation Procedure	D00

	<p>نگهداشت و افزایش تولید میدان نفتی بینک سطح الارض</p> <p>احداث ردیف تراکم گاز در ایستگاه جمع آوری بینک</p>								
شماره پیمان: ۰۵۳ - ۰۷۳ - ۹۱۸۴	PMR FOR INSTRUMENT/PLANT AIR & NITROGEN PACKAGES							شماره صفحه : ۲۱ از ۳۰	
	پروژه	بسته کاری	صادر کننده	تسهیلات	رشته	نوع مدرک	سریال		نسخه
	BK	GCS	PEDCO	120	ME	MR	0006	D04	

ATTACHMENT 2

D03

11.2 VENDOR DOCUMENTS MIN. REQUIREMENT

Item No.	Document	With Bid	TIME SCHEDULE			
			For Review		Final Issue	
		Copies No./Type (7)	Copies No./Type (1)	Solar days (2)	Copies No./Type (1)	Calendar days (3)
MANAGEMENT						
001	Vendor Document Index and Schedule	4N	6C+E		6C+E	
002	Organization Brief	3N	6C+E			
003	Schedule Level 1, 2, 3 & 4 showing Engineering, Procurement, Fabrication, Inspection, Testing, and Delivery Plan.	4N	6C+E		6C+E	
004	Physically Progress Report (Every 2 Weeks))		6C+E			
005	Project Organization Chart	3N	6C+E			
006	Reference List	3N				
007	Vendor Catalogue	3N				
QUALITY						
008	Quality Assurance Manual /Quality Management System Certificate (according to latest rev. of ISO)	4N			6C+E	
009	Preliminary Inspection and Test Plan	4N				
010	Inspection and Test Plan		6C+E		6C+E	
HSE						
011	HSE Procedure		6C+E		6C+E	
012	Noise & Vibrations Calculations / Reports (If any)		6C+E		6C+E	
013	ESD Instructions		6C+E		6C+E	
INTERFACE						
014	Electrical & Instrumentation Cable Schedule (for all systems)		6C+E		6C+E	
015	Electrical & Instrumentation Wiring		6C+E		6C+E	

	<p>نگهداشت و افزایش تولید میدان نفتی بینک سطح الارض</p> <p>احداث ردیف تراکم گاز در ایستگاه جمع آوری بینک</p>								
شماره پیمان:	PMR FOR INSTRUMENT/PLANT AIR & NITROGEN PACKAGES							شماره صفحه: ۲۲ از ۳۰	
۰۵۳ - ۰۷۳ - ۹۱۸۴	پروژه	بسته کاری	صادرکننده	تسهیلات	رشته	نوع مدرک	سریال		نسخه
	BK	GCS	PEDCO	120	ME	MR	0006		D04

Item No.	Document	With Bid	TIME SCHEDULE			
			For Review		Final Issue	
			Copies No./Type (1)	Solar days (2)	Copies No./Type (1)	Calendar days (3)
	Drawings (for all systems)					
016	Package Data Sheets	4N	6C+E		6C+E	
020	Reliability, Availability, Maintainability Calculations/Reports	4N	6C+E		6C+E	
021	Performance Curves		6C+E		6C+E	
022	PFD's	4N	6C+E		6C+E	
023	Functional Description		6C+E		6C+E	
024	General Arrangements Drawings	4N	6C+E		6C+E	
025	Mechanical Equipment List	3N	6C+E		6C+E	
026	Electrical Equipment List	3N	6C+E		6C+E	
027	Control, Instrument & Cable List		6C+E		6C+E	
028	Interface Block Diagrams	3N	6C+E		6C+E	
029	Junction Box, Local Panels & Cabinets: wiring diagrams & termination drawings		6C+E		6C+E	
030	Functional Logic Diagram		6C+E		6C+E	
031	P & ID's	3N	6C+E		6C+E	
032	Utility Consumption List	3N	6C+E		6C+E	
033	Power Supply Requirements	3N	6C+E		6C+E	
034	Single Line Diagram	3N	6C+E		6C+E	
035	Earthing Details	3N	6C+E		6C+E	
036	Weight / Centre of Gravity Drawings & Data's		6C+E		6C+E	
037	External Static and Dynamic Forces & Moments (present during test, start-up, normal/maximum operation, shutdown, and other conditions of service)		6C+E		6C+E	
038	Wind and Seismic Loads including shear and moment forces on supports and foundation.		6C+E		6C+E	
039	Anchor Bolt Details Drawings (incl. size, type, locations relative to the equipment center-lines in three planes).		6C+E		6C+E	

	<p>نگهداشت و افزایش تولید میدان نفتی بینک سطح الارض</p> <p>احداث ردیف تراکم گاز در ایستگاه جمع آوری بینک</p>								
شماره پیمان:	PMR FOR INSTRUMENT/PLANT AIR & NITROGEN PACKAGES							شماره صفحه: ۲۳ از ۳۰	
۰۵۳ - ۰۷۳ - ۹۱۸۴	پروژه	بسته کاری	صادرکننده	تسهیلات	رشته	نوع مدرک	سریال		نسخه
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Item No.	Document	With Bid	TIME SCHEDULE			
			For Review		Final Issue	
			Copies No./Type (1)	Solar days (2)	Copies No./Type (1)	Calendar days (3)
040	Ladder & Platform Detail Drawing		6C+E		6C+E	
041	Steel Structure Detail Drawing		6C+E		6C+E	
ENGINEERING						
042	Detailed Functional Design Specification		6C+E		6C+E	
043	Detailed Overall Description		6C+E		6C+E	
044	Mechanical Detailed Specifications (one per component)		6C+E		6C+E	
045	Detailed Design / Fabrication Drawings for Equipment & Auxiliary Parts		6C+E		6C+E	
046	Cross Sectional Drawings with Part Lists		6C+E		6C+E	
047	Assembly Drawings		6C+E		6C+E	
048	Design Calculation Notes		6C+E		6C+E	
049	Pressure Parts Calculations		6C+E		6C+E	
050	Piping Detailed Specifications (one per component)		6C+E		6C+E	
051	Piping Routing		6C+E		6C+E	
052	Valves & Instruments Location Drawings (incl. provisions for operational and maintenance access)		6C+E		6C+E	
053	Electrical Detailed Specifications (one per component)		6C+E		6C+E	
054	Electrical Cables Routing (incl. cable trays & junction boxes)		6C+E		6C+E	
055	Electrical Equipment Location Drawings (incl. provisions for operational and maintenance access)		6C+E		6C+E	
056	Protection Device Operating Curves		6C+E		6C+E	
057	Electrical Control Schematics		6C+E		6C+E	
058	Instrument & Control Detailed Specifications (one per component)		6C+E		6C+E	
059	Instrument cables routing (incl. cable		6C+E		6C+E	

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شماره پیمان:	PMR FOR INSTRUMENT/PLANT AIR & NITROGEN PACKAGES							شماره صفحه : ۲۴ از ۳۰	
۰۵۳ - ۰۷۳ - ۹۱۸۴	پروژه	بسته کاری	صادرکننده	تسهیلات	رشته	نوع مدرک	سریال		نسخه
	BK	GCS	PEDCO	120	ME	MR	0006		D04

Item No.	Document	With Bid	TIME SCHEDULE			
			For Review		Final Issue	
			Copies No./Type (7)	Copies No./Type (1) Solar days (2)	Copies No./Type (1)	Calendar days (3)
	trays & junction boxes)					
060	Instrument Equipment Location Drawings (incl. provisions for operational and maintenance access)		6C+E		6C+E	
061	Hook-Up Diagrams		6C+E		6C+E	
062	Wiring Loops Diagrams		6C+E		6C+E	
063	Instrument Control Schematics		6C+E		6C+E	
064	Instrument Mounting & Housing Instructions		6C+E		6C+E	
065	Power Distribution & Consumption		6C+E		6C+E	
066	Cause & Effect Charts		6C+E		6C+E	
067	Original Software for Control & Monitoring System		6C+E		6C+E	
068	Software System Specifications		6C+E		6C+E	
069	Approximate Weight & Dimension	4N				
070	Shipping Detail Drawing		6C+E		6C+E	
071	Final Data Book		6C+E		6C+E	
072	Pressure Loss Calculations		6C+E		6C+E	
073	Lubrication System Detailed Specifications / Drawings		6C+E		6C+E	
074	Cooling System Detailed Specifications/Drawings		6C+E		6C+E	
075	Shaft Sealing System Detailed Specifications/Drawings	4N	6C+E		6C+E	
076	Completed Equipment Datasheets	4N	6C+E		6C+E	
077	Calculation sheets for safety valves, control valves & orifice plate		6C+E		6C+E	
078	Complex loop & automation descriptions, list of alarms & shutdown with set points		6C+E		6C+E	
079	Electrical Equipment Catalogue	3N	6C+E		6C+E	
080	Electrical Interface Block Diagrams		6C+E		6C+E	
081	Local Control Station of motors wiring		6C+E		6C+E	

	<p>نگهداشت و افزایش تولید میدان نفتی بینک سطح الارض</p> <p>احداث ردیف تراکم گاز در ایستگاه جمع آوری بینک</p>								
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۰۵۳ - ۰۷۳ - ۹۱۸۴	پروژه	بسته کاری	صادرکننده	تسهیلات	رشته	نوع مدرک	سریال		نسخه
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Item No.	Document	With Bid	TIME SCHEDULE			
			For Review		Final Issue	
		Copies No./Type (7)	Copies No./Type (1)	Solar days (2)	Copies No./Type (1)	Calendar days (3)
	diagram, termination drawing and general arrangement					
082	Gear System Detailed Specifications / Drawings		6C+E		6C+E	
083	Coupling System Detailed Specifications / Drawings		6C+E		6C+E	
PROCUREMENT						
084	List of Sub-Suppliers (table giving: part of equipment, tag no., sub-supplier reference)	4N			6C+E	
085	Unpriced copy of sub-orders		6C+E			
MANUFACTURING						
086	Weld and NDT Map		6C+E		6C+E	
087	Surface Preparation and Painting Procedures		6C+E		6C+E	
088	Heat Treatment Procedures		6C+E		6C+E	
089	Welding Procedure Specification (including repair procedures).		6C+E		6C+E	
090	Welder Qualification Procedure		6C+E		6C+E	
091	Fabrication Degree	3N				
TESTING						
092	Hydrostatic / Pneumatic Testing Procedure		6C+E		6C+E	
093	Performance & Functional Test Procedure		6C+E		6C+E	
094	Non-Destructive Testing/Examination Procedures		6C+E		6C+E	
095	Factory Acceptance Test (FAT) Procedure		6C+E		6C+E	
096	SITE Acceptance Test (SAT) Procedure		6C+E		6C+E	
RECORDS, REPORTS & CERTIFICATES						
097	Material Conformity Certificate		6C+E		6C+E	
098	Testing Authority Approval Certificate (if		6C+E		6C+E	

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۰۵۳ - ۰۷۳ - ۹۱۸۴	پروژه	بسته کاری	صادرکننده	تسهیلات	رشته	نوع مدرک	سریال		نسخه
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Item No.	Document	With Bid	TIME SCHEDULE			
			For Review		Final Issue	
			Copies No./Type (1)	Solar days (2)	Copies No./Type (1)	Calendar days (3)
	any)					
099	Hazardous Area Certificates.		6C+E		6C+E	
100	Ingress Protection Certificate		6C+E		6C+E	
101	Conformity Certificates (sub-supplier/equipment)		6C+E		6C+E	
102	Material Certificates Identification Diagram. (cross-reference material location ; certificates for critical components)		6C+E		6C+E	
103	Welding Procedure Qualification Record		6C+E		6C+E	
104	Welder Qualification Records.		6C+E		6C+E	
105	NDT Operator Qualifications		6C+E		6C+E	
106	Detailed NDT Reports		6C+E		6C+E	
107	Weld/ NDT Identification Diagram. (Cross-reference weld locations, WPS, welders, NDT reports).		6C+E		6C+E	
108	Dimensional Control Reports		6C+E		6C+E	
109	Hardness Test Reports		6C+E		6C+E	
110	PWHT Charts & Reports, including calibration records of recorders (for each heat treatment)		6C+E		6C+E	
111	Pressure Test Reports / Certificates		6C+E		6C+E	
112	FAT Test Report / Certificates		6C+E		6C+E	
113	Performance Test Report / Certificates		6C+E		6C+E	
114	Noise & Vibration Test Report / Certificates		6C+E		6C+E	
115	Electric Motor Type Test Report (if any)		6C+E		6C+E	
116	Electric Motor Routine Test Report		6C+E		6C+E	
117	Cable Continuity and Resistance Test Reports		6C+E		6C+E	
118	Calibration Curves of Control Equipment		6C+E		6C+E	
119	Calibration Test Certificates		6C+E		6C+E	

Item No.	Document	With Bid	TIME SCHEDULE			
			For Review		Final Issue	
		Copies No./Type (7)	Copies No./Type (1)	Solar days (2)	Copies No./Type (1)	Calendar days (3)
120	Surface Preparation & Coating Reports		6C+E		6C+E	
121	Hydrostatic / Pneumatic Testing Certificates		6C+E		6C+E	
122	Welding Consumable Certificate		6C+E		6C+E	
123	Inspection and Test Reports(if any)		6C+E		6C+E	
124	Rust Prevention Report		6C+E		6C+E	
125	Non-Conformities Report		6C+E		6C+E	
INSTALLATION						
126	Sub-Assembly Documentation		6C+E		6C+E	
127	Sub-Assembly Drawings		6C+E		6C+E	
128	Erection/Installation Manual (if required)		6C+E		6C+E	
129	Name Plate Documents		6C+E		6C+E	
130	Handling, Transportation & Storage Instructions		6C+E		6C+E	
131	Unpacking & Inspection Instructions		6C+E			
132	Preliminary Packing List	4N				
132	Packing List		6C+E		6C+E	
OPERATION & MAINTENANCE						
133	Operating Instructions		6C+E		6C+E	
134	Maintenance Instructions (if required)		6C+E		6C+E	
135	Commissioning & Start-up Manual		6C+E		6C+E	
136	List of Spare Parts Commissioning & Start-up	4N	6C+E		6C+E	
136	List of Spare Parts 2 Years Operation	4N	6C+E		6C+E	
137	List of Special Tools	4N	6C+E		6C+E	
138	Lube Oil Schedule		6C+E		6C+E	
139	Software Manual (incl. Troubleshooting)		6C+E		6C+E	
140	Consumables List		6C+E		6C+E	
141	Function Test Procedure		6C+E		6C+E	
OTHERS						

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	پروژه	بسته کاری	صادر کننده	تسهیلات	رشته	نوع مدرک	سریال	
	BK	GCS	PEDCO	120	ME	MR	0006	D04

Item No.	Document	With Bid	TIME SCHEDULE			
			For Review		Final Issue	
		Copies No./Type (7)	Copies No./Type (1)	Solar days (2)	Copies No./Type (1)	Calendar days (3)
142	All others documents (if required) will be listed in the order		6C+E			

NOTES:

- (1) N= Number of document, C=Copy, E=Electronic Copy
- (2) Starting from date of order placement
- (3) Starting from reception of documentation without comments
- (4) First issue of the document is subjected to the release of payment milestone as per purchase order
- (5) Calendar days after reception of drive data
- (6) Prior to testing
- (7) One copy each bid copy
- (8) List of Documents will be Finalized in VPIS

	<p>نگهداشت و افزایش تولید میدان نفتی بینک سطح الارض</p> <p>احداث ردیف تراکم گاز در ایستگاه جمع آوری بینک</p>								
شماره پیمان: ۰۵۳ - ۰۷۳ - ۹۱۸۴	PMR FOR INSTRUMENT/PLANT AIR & NITROGEN PACKAGES							شماره صفحه : ۲۹ از ۳۰	
	پروژه	بسته کاری	صادر کننده	تسهیلات	رشته	نوع مدرک	سریال		نسخه
	BK	GCS	PEDCO	120	ME	MR	0006	D04	

ATTACHMENT 3

11.3 DEVIATIONS / EXCEPTIONS TO JOB SPECIFICATION

Requisition No.:

Description:

Equipment No.:

Item No.	Description of proposed exception	Recommended revision to job specification	Reason for proposed exception	Effect on base proposal if CONTRACTOR rejects exception

	<p>نگهداشت و افزایش تولید میدان نفتی بینک سطح الارض</p> <p>احداث ردیف تراکم گاز در ایستگاه جمع آوری بینک</p>								
شماره پیمان: ۰۵۳ - ۰۷۳ - ۹۱۸۴	PMR FOR INSTRUMENT/PLANT AIR & NITROGEN PACKAGES							شماره صفحه : ۳۰ از ۳۰	
	پروژه	بسته کاری	صادر کننده	تسهیلات	رشته	نوع مدرک	سریال		نسخه
	BK	GCS	PEDCO	120	ME	MR	0006	D04	

ATTACHMENT 4

11.4 ALTERNATIVES TO JOB SPECIFICATION

Requisition No.:

Description:

Equipment No.:

Item No.	Job Specification No. & Paragraph No.	Requirements of Job Specification	Description of Proposed Alternative	Reason for Proposed Alternative