



طرح نگهداشت و افزایش تولید ۲۷ مخزن

**PMR FOR CENTRIFUGAL PUMPS FOR PROCESS SERVICES**

نگهداشت و افزایش تولید میدان نفتی بینک

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 <p>NISOC</p>	<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.

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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 process pumps 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	P-2101 A/B	Slug Pump	2 (1+1)
2	P-2202 A/B	Closed Drain Pump	2 (1+1)
3	P-2201 A/B	Flare K.O. Drum Pump	2 (1+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.

### d. 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 centrifugal pumps each one shall be driven by an electromotor 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

The scope of supply is detailed below:

- Centrifugal Pumps, Pump shall be according to API 610 standard, edition 11
- Appropriate mechanical seal according to API 682 including all the relevant accessories
- Baseplate common for each pump train incl. pump, driver, gearbox (If any), seals and sealing systems, coupling with guard and other auxiliary systems (mounted by vendor at shop)
- Coupling (dry flexible spacer with spark proof guard)
- Electrical motor for each pump with terminal boxes and accessories incl. anti-condensation heater, RTD's and etc. (if applicable)

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- On-skid cabling, tray and fittings
- Outdoor MCC for Auxiliaries Electrical Load (if any)
- All motor junction boxes complete with necessary terminals
- Instrumentation including junction box, wiring from instruments to the junction box and manifolds for pressure instruments
- Earthing lugs and material
- Lifting lugs and all necessary lifting lugs
- Charging device for Nitrogen and trolley mobile charging unit for all seal pots
- Barrier filling device
- Valved casing drain & vent (for horizontal items)
- Gasket, bolts and nuts for on-vessel items
- Foundation bolts and nuts (anchor bolt), skid leveling screws, shims, sub-plates
- Any other accessories and auxiliaries specify in data sheet
- First fill of oil / grease
- Cooling plan with all required piping, valves instruments and etc. routed to the edge of skid
- Suction strainer for vertical pumps
- All necessary accessories for utility distribution
- Name plates
- Thermal insulation jacket (if needed)
- Insulation clip and supports for line and equipment
- Clip and supports required for equipment fire proofing (if required)
- Sun protection facilities
- Special tools for erection and maintenance
- Spare Parts for erection, pre-commissioning, commissioning and start up and two years operation.
- Capital spare parts (as option)

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- All requirements for safe and easy start up of pumps
- Any other items not listed above which are necessary for satisfactory design and operation of the pump shall be furnished by vendor.

### 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&D-QC-SP-1). Commissioning and start-up spare parts shall be listed in a separate form. During bid stage, Vendor shall submit a detailed list of spare parts together with backup documentation and drawings, specifying quantities.
- Spare parts for two years operation; a qualified and complete list based on PROJECT SPARE PART SUPPLY PROCEDURE (Doc. No. E&D-QC-SP-1). Two years spare parts shall be listed in a separate form and quoted as separate optional price and the price shall be valid for 6 months after purchase order.
- Capital spare parts (as option / if any)

### 5.1.3 ENGINEERING SERVICES

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.
- 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.





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- 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:
  - o Sub suppliers products quality
  - o 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.

#### 5.1.4 OTHER ITEMS

- Special tools required for installation and maintenance
- Noise acoustic protection and relevant ancillaries in order to match with max. noise level requirements (if necessary)
- Name plate
- Earthing plate
- Painting of all items in accordance with "Painting Specification".
- Preparation for shipment
- Packing for sea freight transportation
- 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



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## 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 Pump Package
- Piping within the Pump Package, all on skid piping/tubing with supports and all required fitting, valves, instruments and etc. on them. All on skid piping / tubing to be supplied by vendor and installed by him at shop
- All drains and vents piping routed to the edge of skid with block valves, manifold piping and blind flanges.
- 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)
- 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:



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- 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 Pumps
- Site erection
- Lubricants (except first filling)

#### 5.4 BATTERY LIMITS

The battery limits are summarized as follows:

- Process
  - Inlet and outlet flanges on pump skid
- Instrumentation and control
  - terminal strips inside junction boxes at skid edges
- Electrical
  - Electrical equipment terminal boxes on skids
  - Incoming Power Supply of AC or DC UPS (if Any)
  - Earth Bosses on Skids.
- Vents and Drains
  - Drain flanges manifold
  - Outlet vent piping flanges

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## 6.0 INSPECTION AND TESTS

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The equipment shall be inspected and tested in accordance with the quality control plan issued by the supplier and approved by the PURCHASER before the award of the order. The QC plan shall at least be according to the "Commodity Procurement and Manufacturing Inspection Instruction"; Doc. No. ICE-EID-MI-SP01-Rev.01, "دستورالعمل انتخاب سطح بازرسی کالا و تجهیزات", ICE-EID-MI-SP02-REV-01 and data sheets (if any).

The supplier 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.



## 7.0 VENDOR DOCUMENTATION REQUIREMENTS & SCHEDULE

- Vendor shall prepare and submit all of required documents as per relevant "Vendor Data" section of relevant reference standard (API 610 11<sup>th</sup> edition).
- As a minimum Vendor document shall be according to attachment 2 of this document.
- All documents, preliminary or final, are to be stamped and signed by the supplier.
- Failure in dispatch of the required documents shall cause the supply to be considered as unfulfilled.
- PURCHASER'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.
- All drawings and documents are to be identified as per clause 1 "**GENERAL DEFINITION**"

## 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.

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شماره پیمان: ۰۵۳ - ۰۷۳ - ۹۱۸۴	<table><tr><th colspan="8">PMR FOR CENTRIFUGAL PUMPS FOR PROCESS SERVICES</th></tr><tr><th>پروژه</th><th>بسته کاری</th><th>صادر کننده</th><th>تسهیلات</th><th>رشته</th><th>نوع مدرک</th><th>سریال</th><th>نسخه</th></tr><tr><td>BK</td><td>GCS</td><td>PEDCO</td><td>120</td><td>ME</td><td>MR</td><td>0009</td><td>D02</td></tr></table>	PMR FOR CENTRIFUGAL PUMPS FOR PROCESS SERVICES								پروژه	بسته کاری	صادر کننده	تسهیلات	رشته	نوع مدرک	سریال	نسخه	BK	GCS	PEDCO	120	ME	MR	0009	D02	شماره صفحه : ۱۳ از ۲۶
PMR FOR CENTRIFUGAL PUMPS FOR PROCESS SERVICES																										
پروژه	بسته کاری	صادر کننده	تسهیلات	رشته	نوع مدرک	سریال	نسخه																			
BK	GCS	PEDCO	120	ME	MR	0009	D02																			

## 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 and/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.

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.

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## 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&D-QC-SP-1)
- 3) 2 years operational spare parts (E&D-QC-SP-1)
- 4) Capital spare parts
- 5) Packing & transportation
- 6) Other fee (if any)



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	پروژه	بسته کاری	صادر کننده	تسهیلات	رشته	نوع مدرک	سریال		نسخه
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## ATTACHMENT 1

### LIST OF REFERENCE / APPLICABLE DOCUMENTS



No.	Document Title	Document No.	Rev.
<b>Process</b>			
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	Utility Flow Diagram	BK-GCS-PEDCO-120-PR-UF-0001	D04
5	P&ID - Slug Catcher System	BK-GCS-PEDCO-120-PR-PI-0004	D06
6	P&ID - Close Drain System	BK-GCS-PEDCO-120-PR-PI-0017	D06
7	P&ID - LP Flare System	BK-GCS-PEDCO-120-PR-PI-0020	D06
8	Process Data Sheets For Slug Pump	BK-GCS-PEDCO-120-PR-DT-0020	D04
9	Process Data Sheets For Closed Drain Pump	BK-GCS-PEDCO-120-PR-DT-0023	D05
10	Process Data Sheets For Flare K.O Drum Pump	BK-GCS-PEDCO-120-PR-DT-0025	D04
11	Calculation Note for Pumps	BK-GCS-PEDCO-120-PR-CN-0001	D06
<b>Mechanical</b>			
12	Mechanical Design Criteria	BK-GNRAL-PEDCO-000-ME-DC-0001	D04
13	Specification For Centrifugal Pumps For Process Services (API610)	BK-GCS-PEDCO-120-ME-SP-0003	D04
14	Mechanical Data Sheets For Slug Pumps	BK-GCS-PEDCO-120-ME-DT-0019	D03
15	Mechanical Data Sheets For Closed Drain Pumps	BK-GCS-PEDCO-120-ME-DT-0022	D05
16	Mechanical Data Sheets For Flare KO Drum Pumps	BK-GCS-PEDCO-120-ME-DT-0024	D05
<b>Piping &amp; Material</b>			
17	Piping Material Specification	BK-GCS-PEDCO-120-PI-SP-0001	D02
18	Specification For Fittings, Flanges, Gaskets and Bolts	BK-GNRAL-PEDCO-000-PI-SP-0005	D03
19	Specification For Painting	BK-GNRAL-PEDCO-000-PI-SP-0006	D04
20	Specification For Insulation	BK-GNRAL-PEDCO-000-PI-SP-0019	D02
21	Specification For Manual Valves	BK-GNRAL-PEDCO-000-PI-SP-0009	D01
22	Specification For Welding of Plant Piping System	BK-GNRAL-PEDCO-000-PI-SP-0011	D01
23	Piping Design Criteria	BK-GNRAL-PEDCO-000-PI-DC-0001	D04
24	Specification For the Design of Piping in Mechanical Packages	BK-GNRAL-PEDCO-000-PI-SP-0003	D01
25	Specification For Lining (Internal Protection of Equipment by Painting)	BK-GNRAL-PEDCO-000-PI-SP-0007	D02
26	Specification For Piping Cleaning and Flushing	BK-GNRAL-PEDCO-000-PI-SP-0017	D03
27	Piping Corrosion Study & Material Selection Report	BK-GCS-PEDCO-120-PI-RT-0001	D04
28	NDT Plan For steel Structures	BK-GNRAL-PEDCO-000-QC-PR-0041	D00
29	Specification For Material Requirements in Sour service	BK-GNRAL-PEDCO-000-PI-SP-0008	D01
30	Specification For Metallic Pipes	BK-GNRAL-PEDCO-000-PI-SP-0004	D06



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	پروژه	بسته کاری	صادر کننده	تسهیلات	رشته	نوع مدرک	سریال		نسخه
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No.	Document Title	Document No.	Rev.
31	Specification For Color Coding and Marking	BK-GNRAL-PEDCO-000-PI-SP-0001	D02
32	Specification For Plant Piping Systems Pressure Testing	BK-GNRAL-PEDCO-000-PI-SP-0010	D02
<b>Structure</b>			
33	Structural Design Criteria	BK-GNRAL-PEDCO-000-ST-DC-0001	D02
34	Standard Drawing For Anchor Bolts	BK-GNRAL-PEDCO-000-ST-DW-0002	D02
<b>Control &amp; Instrumentation</b>			
35	Specification For Instrumentation	BK-GNRAL-PEDCO-000-IN-SP-0001	D04
36	Specification For Instrument and Control of package Unit System (PU)	BK-GNRAL-PEDCO-000-IN-SP-0004	D02
37	Specification For Instrument/F&G Cables	BK-GNRAL-PEDCO-000-IN-SP-0010	D02
<b>Electrical</b>			
38	Electrical System Design Criteria	BK-GNRAL-PEDCO-000-EL-DC-0001	D02
39	Specification For LV Switchgear & Motor Control Centers	BK-GNRAL-PEDCO-000-EL-SP-0001	D03
40	Specification For LV Induction Motors	BK-GNRAL-PEDCO-000-EL-SP-0010	D03
41	Specification For Electrical Requirements of Packaged Units	BK-GNRAL-PEDCO-000-EL-SP-0011	D03
42	Data Sheets For LV Induction Motors	BK-GCS-PEDCO-120-EL-DT-0008	D03
43	Data Sheets For MV Induction Motors	BK-GCS-PEDCO-120-EL-DT-0009	D03
<b>Safety &amp; Fire Fighting</b>			
44	Specification For Hazardous Area Classification	BK-GNRAL-PEDCO-000-SA-SP-0002	D03
45	Hazardous Area Classification Layout	BK-GCS-PEDCO-120-SA-PY-0002	D00
<b>General</b>			
46	دستورالعمل بازرسی، خرید و ساخت کالا	ICE-EID-MI-SP01	D01
47	دستورالعمل تامین قطعات یدکی راه اندازی و راهبری دو سالانه	E&D-QC-SP-1	D00
48	دستورالعمل انتخاب سطح بازرسی کالا و تجهیزات	ICE-EID-MI-SP02-REV-01	D01
49	Specification For Final Data Book (FDB) Requirements	BK-GNRAL-PEDCO-000-QC-PR-0022	D00
50	Packing, Marking, Transportation Procedure	BK-GNRAL-PEDCO-000-QC-PR-0045	D00





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## ATTACHMENT 2



D02

### VENDOR DOCUMENTS MIN. REQUIREMENT



Item No.	Document	With Bid	TIME SCHEDULE			
		Copies No./Type (7)	For Review		Final Issue	
			Copies No./Type (1)	Solar days (2)	Copies No./Type (1)	Calendar days (3)
MANAGEMENT						
1.	Vendor Document Index and Schedule (Deleted)	4N	6C+E		6C+E	
2.	Organization Brief	3N	6C+E			
3.	Schedule Level 1, 2, 3 & 4 showing Engineering, Procurement, Fabrication, Inspection, Testing, and Delivery Plan.	4N	6C+E		6C+E	
4.	Physically Progress Report (Every 2 Weeks))		6C+E			
5.	Project Organization Chart	3N	6C+E			
6.	Reference List	3N				
7.	Vendor Catalogue	3N				
QUALITY						
8.	Quality Assurance Manual /Quality Management System Certificate (according to latest rev. of ISO)	4N			6C+E	
9.	Preliminary Inspection and Test Plan	4N				
10.	Inspection and Test Plan		6C+E		6C+E	
HSE						
11.	HSE Procedure		6C+E		6C+E	
12.	Noise & Vibrations Calculations / Reports (If any)		6C+E		6C+E	
INTERFACE						
13.	Electrical & Instrumentation Cable Schedule (for all systems)		6C+E		6C+E	
14.	Electrical & Instrumentation Wiring Drawings (for all systems)		6C+E		6C+E	
15.	Pump Data Sheets	4N	6C+E		6C+E	

 <p>NISOC</p>	<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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	پروژه	بسته کاری	صادر کننده	تسهیلات	رشته	نوع مدرک	سریال		نسخه
	BK	GCS	PEDCO	120	ME	MR	0009	D02	



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) Calenda r days (3)
16.	Reliability, Availability, Maintainability Calculations/Reports	4N		6C+E		6C+E
17.	Performance Curves			6C+E		6C+E
18.	PFD's	4N		6C+E		6C+E
19.	Functional Description			6C+E		6C+E
20.	General Arrangements Drawings	4N		6C+E		6C+E
21.	Mechanical Equipment List	3N		6C+E		6C+E
22.	Electrical Equipment List	3N		6C+E		6C+E
23.	Control, Instrument & Cable List			6C+E		6C+E
24.	Interface Block Diagrams	3N		6C+E		6C+E
25.	Junction Box, Local Panels & Cabinets: wiring diagrams & termination drawings			6C+E		6C+E
26.	Functional Logic Diagram			6C+E		6C+E
27.	P & ID's	3N		6C+E		6C+E
28.	Utility Consumption List	3N		6C+E		6C+E
29.	Power Supply Requirements	3N		6C+E		6C+E
30.	Single Line Diagram	3N		6C+E		6C+E
31.	Earthing Details	3N		6C+E		6C+E
32.	Weight / Centre of Gravity Drawings & Data's			6C+E		6C+E
33.	External Static and Dynamic Forces & Moments (present during test, start-up, normal/maximum operation, shutdown, and other conditions of service)			6C+E		6C+E
34.	Wind and Seismic Loads including shear and moment forces on supports and foundation.			6C+E		6C+E
35.	Anchor Bolt Details Drawings (incl. size, type, locations relative to the equipment center-lines in three planes).			6C+E		6C+E
36.	Ladder & Platform Detail Drawing			6C+E		6C+E

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	پروژه	بسته کاری	صادر کننده	تسهیلات	رشته	نوع مدرک	سریال	نسخه	
	BK	GCS	PEDCO	120	ME	MR	0009	D02	

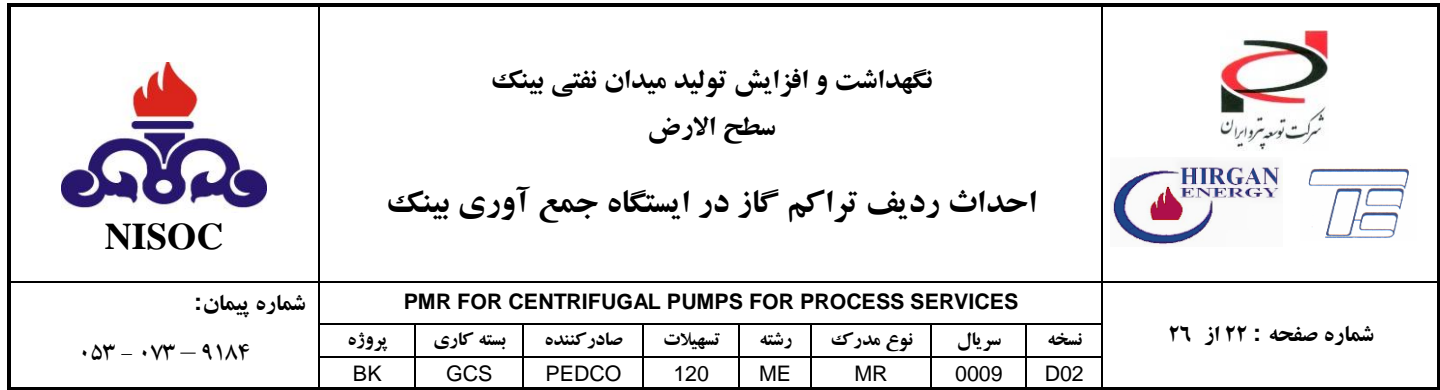
Item No.	Document	With Bid Copies No./Type (7)	TIME SCHEDULE			
			For Review		Final Issue	
			Copies No./Type (1)	Solar days (2)	Copies No./Type (1)	Calenda r days (3)
37.	Steel Structure Detail Drawing		6C+E		6C+E	
<b>ENGINEERING</b>						
38.	Detailed Functional Design Specification		6C+E		6C+E	
39.	Detailed Overall Description		6C+E		6C+E	
40.	Mechanical Detailed Specifications (one per component)		6C+E		6C+E	
41.	Detailed Design / Fabrication Drawings for Equipment & Auxiliary Parts		6C+E		6C+E	
42.	Cross Sectional Drawings with Part Lists		6C+E		6C+E	
43.	Assembly Drawings		6C+E		6C+E	
44.	Design Calculation Notes		6C+E		6C+E	
45.	Pressure Parts Calculations		6C+E		6C+E	
46.	Piping Detailed Specifications (one per component)		6C+E		6C+E	
47.	Piping Routing		6C+E		6C+E	
48.	Valves & Instruments Location Drawings (incl. provisions for operational and maintenance access)		6C+E		6C+E	
49.	Electrical Detailed Specifications (one per component)		6C+E		6C+E	
50.	Electrical Cables Routing (incl. cable trays & junction boxes)		6C+E		6C+E	
51.	Electrical Equipment Location Drawings (incl. provisions for operational and maintenance access)		6C+E		6C+E	
52.	Protection Device Operating Curves		6C+E		6C+E	
53.	Electrical Control Schematics		6C+E		6C+E	
54.	Instrument & Control Detailed Specifications (one per component)		6C+E		6C+E	
55.	Instrument cables routing (incl. cable trays & junction boxes)		6C+E		6C+E	
56.	Instrument Equipment Location Drawings		6C+E		6C+E	

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شماره پیمان: ۰۵۳ - ۰۷۳ - ۹۱۸۴	<table><tr><th colspan="8">PMR FOR CENTRIFUGAL PUMPS FOR PROCESS SERVICES</th></tr><tr><th>نسخه</th><th>سریال</th><th>نوع مدرک</th><th>رشته</th><th>تسهیلات</th><th>صادر کننده</th><th>بسته کاری</th><th>پروژه</th></tr><tr><td>D02</td><td>0009</td><td>MR</td><td>ME</td><td>120</td><td>PEDCO</td><td>GCS</td><td>BK</td></tr></table>	PMR FOR CENTRIFUGAL PUMPS FOR PROCESS SERVICES								نسخه	سریال	نوع مدرک	رشته	تسهیلات	صادر کننده	بسته کاری	پروژه	D02	0009	MR	ME	120	PEDCO	GCS	BK	شماره صفحه : ۲۰ از ۲۶
PMR FOR CENTRIFUGAL PUMPS FOR PROCESS SERVICES																										
نسخه	سریال	نوع مدرک	رشته	تسهیلات	صادر کننده	بسته کاری	پروژه																			
D02	0009	MR	ME	120	PEDCO	GCS	BK																			

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)
	(incl. provisions for operational and maintenance access)					
57.	Hook-Up Diagrams			6C+E		6C+E
58.	Wiring Loops Diagrams			6C+E		6C+E
59.	Instrument Control Schematics			6C+E		6C+E
60.	Instrument Mounting & Housing Instructions			6C+E		6C+E
61.	Power Distribution & Consumption			6C+E		6C+E
62.	Cause & Effect Charts			6C+E		6C+E
63.	Original Software for Control & Monitoring System			6C+E		6C+E
64.	Software System Specifications			6C+E		6C+E
65.	Approximate Weight & Dimension	4N				
66.	Shipping Detail Drawing			6C+E		6C+E
67.	Final Data Book			6C+E		6C+E
68.	Pressure Loss Calculations			6C+E		6C+E
69.	Lubrication System Detailed Specifications / Drawings			6C+E		6C+E
70.	Cooling System Detailed Specifications/Drawings			6C+E		6C+E
71.	Shaft Sealing System Detailed Specifications/Drawings	4N		6C+E		6C+E
72.	Completed Equipment Datasheets	4N		6C+E		6C+E
73.	Calculation sheets for safety valves, control valves & orifice plate			6C+E		6C+E
74.	Complex loop & automation descriptions, list of alarms & shutdown with set points			6C+E		6C+E
75.	Electrical Equipment Catalogue	3N		6C+E		6C+E
76.	Electrical Interface Block Diagrams			6C+E		6C+E
77.	Local Control Station of motors wiring diagram, termination drawing and general arrangement			6C+E		6C+E



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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)
78.	Coupling System Detailed Specifications / Drawings		6C+E		6C+E	
<b>PROCUREMENT</b>						
79.	List of Sub-Suppliers ( table giving: part of equipment, tag no., sub-supplier reference)(5.1.3)	4N			6C+E	
80.	Unpriced copy of sub-orders		6C+E			
<b>MANUFACTURING</b>						
81.	Weld and NDT Map		6C+E		6C+E	
82.	Surface Preparation and Painting Procedures		6C+E		6C+E	
83.	Heat Treatment Procedures		6C+E		6C+E	
84.	Welding Procedure Specification (including repair procedures).		6C+E		6C+E	
85.	Welder Qualification Procedure		6C+E		6C+E	
86.	Fabrication Degree	3N				
<b>TESTING</b>						
87.	Hydrostatic / Pneumatic Testing Procedure		6C+E		6C+E	
88.	Performance & Functional Test Procedure		6C+E		6C+E	
89.	Non-Destructive Testing/Examination Procedures		6C+E		6C+E	
90.	Factory Acceptance Test (FAT) Procedure		6C+E		6C+E	
<b>RECORDS, REPORTS &amp; CERTIFICATES</b>						
91.	Material Conformity Certificate		6C+E		6C+E	
92.	Testing Authority Approval Certificate (if any)		6C+E		6C+E	
93.	Hazardous Area Certificates.		6C+E		6C+E	
94.	Ingress Protection Certificate		6C+E		6C+E	
95.	Conformity Certificates (sub-supplier/equipment)		6C+E		6C+E	
96.	Material Certificates Identification Diagram. (cross-reference material location ;		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)
	certificates for critical components)					
97.	Welding Procedure Qualification Record		6C+E		6C+E	
98.	Welder Qualification Records.		6C+E		6C+E	
99.	NDT Operator Qualifications		6C+E		6C+E	
100.	Detailed NDT Reports		6C+E		6C+E	
101.	Weld/ NDT Identification Diagram. (Cross-reference weld locations, WPS, welders, NDT reports).		6C+E		6C+E	
102.	Dimensional Control Reports		6C+E		6C+E	
103.	Hardness Test Reports		6C+E		6C+E	
104.	PWHT Charts & Reports, including calibration records of recorders (for each heat treatment)		6C+E		6C+E	
105.	Pressure Test Reports / Certificates		6C+E		6C+E	
106.	FAT Test Report / Certificates		6C+E		6C+E	
107.	Performance Test Report / Certificates		6C+E		6C+E	
108.	Noise & Vibration Test Report / Certificates		6C+E		6C+E	
109.	Electric Motor Type Test Report (if any)		6C+E		6C+E	
110.	Electric Motor Routine Test Report		6C+E		6C+E	
111.	Cable Continuity and Resistance Test Reports		6C+E		6C+E	
112.	Calibration Curves of Control Equipment		6C+E		6C+E	
113.	Calibration Test Certificates		6C+E		6C+E	
114.	Surface Preparation & Coating Reports		6C+E		6C+E	
115.	Hydrostatic / Pneumatic Testing Certificates		6C+E		6C+E	
116.	Welding Consumable Certificate		6C+E		6C+E	
117.	Inspection and Test Reports(if any)		6C+E		6C+E	
118.	Rust Prevention Report		6C+E		6C+E	
119.	Non-Conformities Report		6C+E		6C+E	

INSTALLATION

	<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 CENTRIFUGAL PUMPS FOR PROCESS SERVICES							شماره صفحه : ۲۳ از ۲۶	
	پروژه	بسته کاری	صادر کننده	تسهیلات	رشته	نوع مدرک	سریال		نسخه
	BK	GCS	PEDCO	120	ME	MR	0009	D02	

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.	Sub-Assembly Documentation		6C+E		6C+E	
121.	Sub-Assembly Drawings		6C+E		6C+E	
122.	Erection/Installation Manual (if required)		6C+E		6C+E	
123.	Name Plate Documents		6C+E		6C+E	
124.	Handling, Transportation & Storage Instructions		6C+E		6C+E	
125.	Unpacking & Inspection Instructions		6C+E			
126.	Preliminary Packing List	4N				
127.	Packing List		6C+E		6C+E	
OPERATION & MAINTENANCE						
128.	Operating Instructions		6C+E		6C+E	
129.	Maintenance Instructions (if required)		6C+E		6C+E	
130.	Commissioning & Start-up Manual		6C+E		6C+E	
131.	List of Spare Parts Commissioning & Start-up	4N	6C+E		6C+E	
132.	List of Spare Parts 2 Years Operation	4N	6C+E		6C+E	
133.	List of Special Tools	4N	6C+E		6C+E	
134.	Lube Oil Schedule		6C+E		6C+E	
135.	Software Manual (incl. Troubleshooting)		6C+E		6C+E	
136.	Consumables List		6C+E		6C+E	
137.	Function Test Procedure		6C+E		6C+E	
OTHERS						
138.	All others documents (if required) will be listed in the order		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: ۰۵۳ - ۰۷۳ - ۹۱۸۴	PMR FOR CENTRIFUGAL PUMPS FOR PROCESS SERVICES							شماره صفحه : ۲۴ از ۲۶	
	پروژه	بسته کاری	صادر کننده	تسهیلات	رشته	نوع مدرک	سریال		نسخه
	BK	GCS	PEDCO	120	ME	MR	0009	D02	

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)

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

D02



	<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 CENTRIFUGAL PUMPS FOR PROCESS SERVICES								شماره صفحه : ۲۵ از ۲۶
	پروژه	بسته کاری	صادر کننده	تسهیلات	رشته	نوع مدرک	سریال	نسخه	
	BK	GCS	PEDCO	120	ME	MR	0009	D02	



**ATTACHMENT 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

 NISOC	<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 CENTRIFUGAL PUMPS FOR PROCESS SERVICES								شماره صفحه : ۲۶ از ۲۶
	پروژه	بسته کاری	صادر کننده	تسهیلات	رشته	نوع مدرک	سریال	نسخه	
	BK	GCS	PEDCO	120	ME	MR	0009	D02	

**ATTACHMENT 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