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| **طرح نگهداشت و افزایش تولید 27 مخزن** | | | | | | | |
| **PMR FOR F&G SYSTEM**  **نگهداشت و افزایش تولید میدان نفتی بینک** | | | | | | | |
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| D00 | AUG. 2023 | IFI | P.Hajisadeghi | M.Fakharian | A.M.Mohseni |  |
| **Rev.** | **Date** | **Purpose of Issue/Status** | **Prepared by:** | **Checked by:** | **Approved by:** | **CLIENT Approval** |
| **Class: 3** | | **CLIENT Doc. Number: F0Z-709271** | | | | |
| **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** | | | | | |

**REVISION RECORD SHEET**

|  |  |  |  |  |  |  |  |  |  |  |  |  |
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| **PAGE** | **D00** | **D01** | **D02** | **D03** | **D04** |  | **PAGE** | **D00** | **D01** | **D02** | **D03** | **D04** |
| **1** | X |  |  |  |  | **66** |  |  |  |  |  |
| **2** | X |  |  |  |  | **67** |  |  |  |  |  |
| **3** | X |  |  |  |  | **68** |  |  |  |  |  |
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| **7** | X |  |  |  |  | **72** |  |  |  |  |  |
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| **15** | X |  |  |  |  | **80** |  |  |  |  |  |
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1. **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. |
|  |  |
|  |  |

1. **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 FACP as listed in section 4. All equipment/devices/items shall conform to this requisition and all specifications which have been mentioned in attachment 1 of this material requisition.

1. **reference / ATTACHED DOCUMENTS**
2. Specified documents in attachment 1 shall be considered as a part of this material Requisition.
3. All codes and standards which have been referenced in above mentioned specs shall be considered.
4. 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.
5. 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.

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

The VENDOR 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.

1. **SUBJECT OF THE SUPPLY**

Vendor scope of works and services are design, modifying, inspection, testing & delivery of required F&G system and FACP equipment for connecting to building detectors. The vendor 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.

The vendor's supply shall include:

|  |  |  |  |
| --- | --- | --- | --- |
| **No.** | **Item** | **Description** | **QTY**. **(Set)** |
| **1.** | F&G SYS. and Marshalling cabinet | F&G System (including marshaling and system cabinets) for signals of GCS, SIL 3 PLC Based AS Per BK-GNRAL-PEDCO-000-IN-SP-0012 Doc No:” BK-GNRAL-PEDCO-000-IN-SP-0012” & I/O List For F&G Systems Doc No:” BK-GCS-PEDCO-120-IN-LI-0004” | 1 |
| **2.** | FACP | Fire Alarm Control Panel For GCS Area Buildings. | 1 |
| **3.** | F&G Matrix Panel | Fire & Gas Matrix Panel For GCS Area Buildings As Per Data Sheets For ESD Console/F&G Matrix Panel | 1 |
| **4.** | F&G Engineering/Operator Workstation | F&G Engineering/Operator Workstation with 32" LED/LCD Monitor & Required accessories including required HMI software and Software Licenses. | 1 |
| **5.** | Other required accessories | Accessories like cabinets, power supplies (if required), terminals, ducts, wires, relays and barriers, and other in GCS Area Buildings based on the project documents specially reference documents listed in the attachment 1. | 1 |
| **6.** | LAPTOP | F&G maintenance Laptop as per project Specification  including required softwares and Software Licenses |  |
| **7.** | Software license | All required software licenses shall be prepared as per attached document. | 1 |

1. **LIMITS OF SUPPLY**

## Scope of Supply

The VENDOR 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.
  + Plan for HOLD points in the production process proposed to CLIENT/EPC CONTRACTOR 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
  + Vendor shall also provide the description of the following quality activities:
* Sub vendors’ 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.
* The VENDOR shall take the full responsibility for the whole package control/protection system and shall be responsible for SAT and commissioning of the package.

### Spare parts

* The Vendor shall provide certain quantities of consumable for the installation, pre-commissioning, commissioning, Start-up and up to the end of the guarantee period.
* The quantities shall be estimated by Vendor and shall be based upon the Vendor’s experience. The following two periods shall be taken into account:
* Pre-commissioning and commissioning period where the consumption of consumable is greater
* Normal use of the System
* The VENDOR shall provide lists of recommended spare parts, which shall include the original part numbers with prices for commissioning, start-up and two years operation. All spare parts shall be identified individually.
* 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).
* The VENDOR shall be able to provide spares back up and support for the plant life of at least 20 years.
* SPIR form shall be approved by CLIENT prior to procurement.

### Other Items

* Name plate

## Exclusions

No exclusion is applicable.

## Battery Limits

No battery limit is applicable.

1. **INSPECTION 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 CLIENTor EPC/EPD (GC) 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.

1. **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.
* EPC CONTRACTOR ’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”**

1. **VENDOR 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-VENDORs.

1. **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.

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.

1. **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 CLIENT’s approval.

1. **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

# ATTACHMENT 1

**LIST OF REFERENCE / APPLICABLE DOCUMENTS**

| **No.** | **Document No.** | **Document Title** | **Rev.** |
| --- | --- | --- | --- |
| **Instrument** | | | |
|  | BK-GNRAL-PEDCO-000-IN-SP-0012 | Specification For Fire & Gas System | D03 |
|  | BK-GCS-PEDCO-120-IN-DC-0001 | Fire & Gas Detection Design Criteria | D05 |
|  | BK-GCS-PEDCO-120-IN-DG-0009 | F&G Cause and Effect Diagram For Process Area | D01 |
|  | BK-GCS-PEDCO-120-IN-DG-0010 | F&G Cause and Effect Diagram For Building | D00 |
|  | BK-GCS-PEDCO-120-IN-DG-0008 | Instrument & F&G Junction Box Termination Diagram | D02 |
|  | BK-GCS-PEDCO-120-IN-LI-0009 | Instrument /F&G Cable List | D02 |
|  | BK-GCS-PEDCO-120-IN-LI-0004 | I/O List For F&G Systems | D02 |
|  | BK-GCS-PEDCO-120-IN-LI-0005 | Panels & Junction Box List | D02 |
|  | BK-GCS-PEDCO-120-IN-BD-0001 | Control/ESD/F&G System Block Diagram Configuration | D06 |
|  | BK-GCS-PEDCO-120-IN-PY-0001 | Control Room Layout & Arrangement Drawing | D03 |
|  | BK-GCS-PEDCO-120-IN-DT-0017 | Data Sheets For ESD Console/F&G Matrix Panel | D01 |
|  | BK-GCS-PEDCO-120-IN-PY-0005 | F&G Location Layout For Process Area | D02 |
|  | BK-GCS-PEDCO-120-IN-PY-0006 | F&G Location Layout For Buildings | D01 |
| **Process** | | | |
|  | BK-GNRAL-PEDCO-000-PR-DB-0001 | Process Basis Of Design | D08 |
| **General** | | | |
|  | ICE-EID-MI-SP01-Rev01 | دستورالعمل بازرسی، خرید و ساخت کالا | D01 |
|  | ICE-EID-MI-SP02-Rev01 | دستورالعمل انتخاب سطح بازرسی کالا و تجهیزات | D01 |
|  | E&C-QC-SP-1 | دستورالعمل تامین قطعات یدکی راه اندازی وراهبری دو سالانه | D00 |
|  | BK-GNRAL-PEDCO-000-QC-PR-0022 | Specification For Final Data Book (FDB) Requirements | D00 |
|  | BK-GNRAL-PEDCO-000-QC-PR-0045 | Packing, Marking, Transportation Procedure | D00 |

**\*\*NOTE: THE LATEST REVISION OF PROJECT DOCUMENT IN ATTACHMENT 1 TO BE CONSIDERED AS REFERENCE BY VENDOR.**

# ATTACHMENT 2

## VENDOR DOCUMENTS MIN. REQUIREMENT

| **Item No.** | **Document** | **With Bid** | **TIME SCHEDULE** | | | |
| --- | --- | --- | --- | --- | --- | --- |
| **For Review** | | **Final Issue** | |
| **Copies**  **No./Type** | **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 / Quality Control Plan (according to latest rev. of ISO) | 4N | 6C+E |  | 6C+E |  |
| 009 | Preliminary / Inspection and Test Plan | 4N | 6C+E |  |  |  |
| 010 | Inspection and Test Plan | 4N | 6C+E |  | 6C+E |  |
| **HSE** | | | | | | |
| 011 | HSE Procedure |  | 6C+E |  | 6C+E |  |
| **ENGINEERING** | | | | | | |
| 012 | VENDOR Document Schedule | 3N | 6C+E |  | 6C+E |  |
| 013 | Power Consumption List | 3N | 6C+E |  | 6C+E |  |
| 014 | Detailed Devices Catalogues | 3N | 6C+E |  | 6C+E |  |
| 015 | Equipment List And Cabinet Bill Of Material |  | 6C+E |  | 6C+E |  |
| 016 | Control System Software Catalogue | 3N | 6C+E |  | 6C+E |  |
| 017 | Software System - Specifications |  | 6C+E |  | 6C+E |  |
| 018 | Hardware System - Specifications |  | 6C+E |  | 6C+E |  |
| 019 | Loop Diagrams |  | 6C+E |  | 6C+E |  |
| 020 | I/O assignment |  | 6C+E |  | 6C+E |  |
| 021 | Graphic Pages printout |  | 6C+E |  | 6C+E |  |
| 022 | System Architecture and Network | 3N | 6C+E |  | 6C+E |  |
| 023 | Cable Termination’s/Connection Diagrams |  | 6C+E |  | 6C+E |  |
| 024 | Panel/ESD Console Layout |  | 6C+E |  | 6C+E |  |
| 025 | Power Distribution Diagram |  | 6C+E |  | 6C+E |  |
| 026 | System Software/logic printout |  | 6C+E |  | 6C+E |  |
| 027 | Earthing Diagram |  | 6C+E |  | 6C+E |  |
| 028 | Reliability/Availability/FEMA Report |  | 6C+E |  | 6C+E |  |
| 029 | MODBUS Mapping List |  | 6C+E |  | 6C+E |  |
| **PROCUREMENT** | | | | | | |
| 030 | List of Sub-VENDORs ( table giving: part of equipment, tag no., sub-VENDOR reference) | 4N |  |  | 6C+E |  |
| 031 | Unpriced copy of sub-orders |  | 6C+E |  |  |  |
| 032 | Packing Spec. / Shipping Schedule | 3N | 6C+E |  | 6C+E |  |
| 033 | Weight List/ Shipping List | 3N | 6C+E |  | 6C+E |  |
| 034 | Mechanical & Performance Guarantees | 3N | 6C+E |  | 6C+E |  |
| **TESTING** | | | | | | |
| 035 | Manufacturing, Test & Inspection Procedures | 3N | 6C+E |  | 6C+E |  |
| 036 | Performance & Functional Test Procedure |  | 6C+E |  | 6C+E |  |
| 037 | Factory Acceptance Test (FAT) Procedure |  | 6C+E |  | 6C+E |  |
| 038 | Site Acceptance Test (SAT) Procedure |  | 6C+E |  | 6C+E |  |
| **RECORDS, REPORTS & CERTIFICATES** | | | | | | |
| 039 | HAZARDOUS AREA CLASSIFICATION CERTIFICATES -  Testifying to suitability of electrical/electronic apparatus for use in the Hazardous Area Specified. |  |  |  | 6C+E |  |
| 040 | INGRESS PROTECTION CERTIFICATES -  Testifying to suitability of electrical/electronic apparatus for use in the Hazardous Area Specified. |  |  |  | 6C+E |  |
| 041 | CONFORMITY/COMPLIANCE CERTIFICATES  Attesting conformance to type approval. |  |  |  | 6C+E |  |
| 042 | MANUFACTURING RECORD BOOK INDEX (Standard index will be issued with the Purchase Order). |  | 6C+E |  | 6C+E |  |
| 043 | Pre-FAT Report |  |  |  | 6C+E |  |
| 044 | FAT Report |  |  |  | 6C+E |  |
| 045 | IP Certificate |  | 6C+E |  | 6C+E |  |
| 046 | EX Certificate |  | 6C+E |  | 6C+E |  |
| 047 | Conformity Certificates (sub-VENDOR/equipment) |  | 6C+E |  | 6C+E |  |
| **INSTALLATION** | | | | | | |
| 048 | Sub-Assembly Documentation |  | 6C+E |  | 6C+E |  |
| 049 | Sub-Assembly Drawings |  | 6C+E |  | 6C+E |  |
| 050 | Erection/Installation Manual |  | 6C+E |  | 6C+E |  |
| 051 | Name Plate Documents |  | 6C+E |  | 6C+E |  |
| 052 | Handling, Transportation & Storage Instructions |  | 6C+E |  | 6C+E |  |
| 053 | Unpacking & Inspection Instructions |  | 6C+E |  |  |  |
| 054 | Preliminary Packing List | 4N |  |  |  |  |
| 055 | Packing List |  | 6C+E |  | 6C+E |  |
| **OPERATION & MAINTENANCE** | | | | | | |
| 056 | Operating Instructions |  | 6C+E |  | 6C+E |  |
| 057 | Maintenance Instructions |  | 6C+E |  | 6C+E |  |
| 058 | Commissioning & Start-up Manual |  | 6C+E |  | 6C+E |  |
| 059 | List of Spare Parts Commissioning & Start-up | 4N | 6C+E |  | 6C+E |  |
| 060 | List of Spare Parts 2 Years Operation | 4N | 6C+E |  | 6C+E |  |
| 061 | List of Special Tools | 4N | 6C+E |  | 6C+E |  |
| 062 | Software Manual (incl. Troubleshooting) |  | 6C+E |  | 6C+E |  |
| **OTHERS** | | | | | | |
| 063 | Vendor Final Book |  |  |  | 6C+E | 1 week after delivery |
| 064 | 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) List of documents will be finalized in VDIS. | | | | | | |

# 

# 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** |
|  |  |  |  |  |

# 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** |
|  |  |  |  |  |