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| **طرح نگهداشت و افزایش تولید 27 مخزن** | | | | | | | |
| **DATA SHEETS FOR MAIN HVAC EQUIPMENT OF EXTENSION OF EXISTING CONTROL BUILDING**  **نگهداشت و افزایش تولید میدان نفتی بینک** | | | | | | | |
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|  | |  |  |  |  |  |  |
| D01 | | AUG. 2024 | IFA | K.Ahmadi | M.Fakharian | M.Sadeghian |  |
| D00 | | DEC. 2023 | IFC | K.Ahmadi | M.Fakharian | S.Faramarzpour |  |
| **Rev.** | | **Date** | **Purpose of Issue/Status** | **Prepared by:** | **Checked by:** | **Approved by:** | **CLIENT Approval** |
| **Class: 1** | | | **CLIENT Doc. Number:** **F0Z-708869** | | | | |
| **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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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.

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**GENERAL DEFINITION**

The following terms shall be used in this document.

|  |  |
| --- | --- |
| CLIENT: | National Iranian South Oilfields Company (NISOC) |
| PROJECT: | Binak Oilfield Development – General Facilities |
| GENERAL 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. **Scope**

The scope of this document is to prepare minimum requirement in order to provide “Data Sheets for Main HVAC Equipment “and is issued for Detail Design Phase of project.

1. **NORMATIVE REFERENCES**

## Local Codes and Standards

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* IPS Iranian petroleum standards
* INBC Iranian National Building Code

## International Codes and Standards

* ASTM American Society for Testing Materials Relevant Parts
* API 610 Centrifugal Pumps for General Refinery Service, 10th Edition
* ISO 15156 Petroleum and Natural Gas Industries. Materials for use in H2S Containing Environments in Oil and Gas

Production

* AMCA Air Movement and Control Association
* ANSI American National Standards Institute.
* ASHRAE American Society of Heating, Refrigeration and Air-conditioning Engineer
* ASTM American Society for Testing and Material
* BOCA Building Officials and Code Administrators international
* BS British Standards
* CIBSE Chartered Institute of Building Services Engineers.
* NFPA National fire protection association
* SBCCI Southern Building Code Congress International
* SMACNA Sheet Metal and Air Conditioning Contractors’ National Association
* AWWA [American Water Works Association](http://www.awwa.org/)
* ASME [The American Society of Mechanical Engineers](https://www.asme.org/)

Note: The latest issued or revised edition of all above mentioned codes and standards shall be considered as reference.

## ENVIRONMENTAL DATA

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* Latitude 29° 73’ N
* Longitude 50° 35’ E
* Elevation 10 m
* Summer dry bulb temperature : 41° C
* Summer wet bulb temperature : 30.5° C
* Summer daily range temperature : 15.0° C
* Winter dry bulb temperature : 6° C
* Winter relative humidity : 78%

Refer to "Process Basis of Design; Doc. No BK-GNRAL-PEDCO-000-PR-DB-0001.

1. **DATA SHEET FOR SPLIT PACKAGE UNIT**

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|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **UNIT IDENTITY** | | | | **REF. CODE FOR EQUIPMENT** | | |
| **TYPE** | **BLDG. NAME** | **TAG NO.** |
| Split Package Unit | Control Building (Existing & Extension) | 1202-PU-GCSCB-01 |
| **DESCRIPTIONS** | | | | **Technical Requirement** | | **Manufacturer Proposal** |
| Location | Condensing Unit | | | Control Building Roof | |  |
| Air Handling Unit | | | Control Building HVAC Room | |  |
| Quantity | | | | 1+1 (Duty + Standby) | |  |
| Ambient Design Condition | | Summer DB. Temp (°C) | | 41.0 | |  |
| Summer WB. Temp (°C) | | 30.5 | |  |
| Winter DB. Temp (°C) | | 6.0 | |  |
| Elevation (M) | | 10 | |  |
| Ambient Temperature For Condenser Air Inlet | | | | 50 | |  |
| Total Actual Cooling Load Capacity (Kw) | | | | 159.0 \* 1.1 (+ 10% Over Capacity)= 174.9 | |  |
| Sensible Cooling Load Capacity (Kw) | | | | 81.1 | |  |
| Entering Air DB / WB (°C) | | | | 32.1 / 24.8 | |  |
| Leaving Air DB / WB (°C) | | | | 14.4 / 14.0 | |  |
| Outdoor Air DB / WB (°C) | | | | 41.0 / 30.5 | |  |
| Cooling Coil Type | | | | DX | |  |
| Heating Load Capacity (Kw) | | | | 52.4 \* 1.1 (+ 10% Over Capacity)= 57.64 | |  |
| Entering Air Db (Heating Coil) (°C) | | | | 14.5°C | |  |
| Leaving Air Db (Heating Coil) (°C) | | | | 35.0°C | |  |
| Heating Coil Type | | | | Electrical | |  |
| Type Of Heating Coil Capacity Control | | | | SCR (Thyristor Type) | |  |
| AHU Section Supply Air Flow (L/S) | | | | 4520 | |  |
| AHU Section Return Air Flow (L/S) | | | | 2555 | |  |
| AHU Section Fresh Air Flow (L/S) | | | | 1965 | |  |
| Unit Type | | | | Split Type | |  |
| Compressor Type | | | | Reciprocating / Screw | |  |
| Type Of Capacity Control | | | | Unloader (Reciprocating)/Step Control (Screw) | |  |
| Condensing Temp (°C) | | | | 60 (\*) | |  |
| AHU Section Fan Type | | | | Centrifugal | |  |
| External Static Pressure (Pa) | | | | 579.2 | |  |
| Total Static Pressure (Pa) | | | | (\*) | |  |
| Cooling DX Coil Material | | | | Copper Tube, Aluminum Fine ( Cooling DX Coil Coated With Anti‐Corrosion Material) | |  |
| Supply Air Section | | | | Equipped With Motorized Damper | |  |
| Mixing Box Section | | | | Equipped With Motorized Damper | |  |
| Filter Section | | | Pre-Filter (Before Fan) | Pf1: Al Washable Filter, Pf2: Efficiency G3 (85%) | |  |
| Final-Filter (After Fan) | Efficiency F7 (85%) | |  |
| Total Power Consumption (Kw) | | | | (\*) | |  |
| Electric Power | | | | 400-420 V / 3 PH / 50 HZ | |  |
| No. Of Segment | | | | 2 | |  |
| Dimension (Cm) W\*L\*H | | | AHU Section | (\*) | |  |
| Condensing Unit Section | (\*) | |  |
| Weight (Kg) | | | AHU Section | (\*) | |  |
| Condensing Unit Section | (\*) | |  |
| Refrigerant Type | | | | R-134 A / R-410 A | |  |
| Fan Motor IP | | | Supply Fan | Ip-45 | |  |
| Condenser Fan | IP-45 | |  |
| Compressor IP | | | | Ip-45 | |  |
| Maximum Allowable Noise Level | | | | Indoor: 40-45 db.  Outdoor: 65 db. | |  |
| Model | | | | (\*) | |  |
| Remarks: | | | | (\*) To Be Specified By Manufacturer | |  |

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1. **DATA SHEET FOR EXHAUST FAN**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **UNIT IDENTITY** | | **REF. CODE FOR EQUIPMENT** | | |
| **TYPE** | **BLDG. NAME** | **TAG NO.** |
| Utility Ex. Fan | Control Building (Existing & Extension) | 1202-EF-GCSCB-01 |
| **DESCRIPTIONS** | | **Technical Requirement** | | **Manufacturer Proposal** |
| Unit Location | | Roof | |  |
| Quantity | | 1 | |  |
| Type | | Utility Ex. Fan | |  |
| Location | | Locker + Prayer Room + Store | |  |
| Service | | Exhaust | |  |
| Flow Rate (L/S) | | 420 | |  |
| External Static Pressure (Pa) | | 238 | |  |
| Maximum Fan RPM | | (\*) | |  |
| Motor | Type | Electrical Motor | |  |
| Horse Power | (\*) | |  |
| Voltage / Phase / Cycle | 400/3/50 | |  |
| Protection Class | IP-45 | |  |
| Fan Efficiency (%) | | (\*) | |  |
| Type Of Bearings | | Direct Driven Electric Motor | |  |
| Maximum Sound Level (db.) | | (\*) | |  |
| Allowable Outside/ Inside Noise Level @ 1 Meter From Unit (db) | | 45 (\*) | |  |
| Approximate Overall Dimensions (Mm) | | (\*) | |  |
| Approximate Operating Weight (Kg) | | (\*) | |  |
| Casing Material | | (\*) | |  |
| Propeller Material | | (\*) | |  |
| Fan Motor Shall Be Explosion Proof | | No | |  |
| Model | | (\*) | |  |
| Remarks : | | (\*) To Be Specified By Vendor | |  |

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| **UNIT IDENTITY** | | **REF. CODE FOR EQUIPMENT** | | |
| **TYPE** | **BLDG. NAME** | **TAG NO.** |
| Utility Ex. Fan | Control Building (Existing & Extension) | 1202-EF-GCSCB-02 |
| **DESCRIPTIONS** | | **Technical Requirement** | | **Manufacturer Proposal** |
| Unit Location | | Roof | |  |
| Quantity | | 1 | |  |
| Type | | Utility Ex. Fan | |  |
| Location | | Pantry + Dining Room | |  |
| Service | | Exhaust | |  |
| Flow Rate (L/S) | | 420 | |  |
| External Static Pressure (Pa) | | 249.172 | |  |
| Maximum Fan RPM | | (\*) | |  |
| Motor | Type | Electrical Motor | |  |
| Horse Power | (\*) | |  |
| Voltage / Phase / Cycle | 400/3/50 | |  |
| Protection Class | IP-45 | |  |
| Fan Efficiency (%) | | (\*) | |  |
| Type Of Bearings | | Direct Driven Electric Motor | |  |
| Maximum Sound Level (db.) | | (\*) | |  |
| Allowable Outside/ Inside Noise Level @ 1 Meter From Unit (db) | | 45 (\*) | |  |
| Approximate Overall Dimensions (Mm) | | (\*) | |  |
| Approximate Operating Weight (Kg) | | (\*) | |  |
| Casing Material | | (\*) | |  |
| Propeller Material | | (\*) | |  |
| Fan Motor Shall Be Explosion Proof | | No | |  |
| Model | | (\*) | |  |
| Remarks : | | (\*) To Be Specified By Vendor | |  |

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| **UNIT IDENTITY** | | **REF. CODE FOR EQUIPMENT** | | |
| **TYPE** | **BLDG. NAME** | **TAG NO.** |
| Utility Ex. Fan | Control Building (Existing & Extension) | 1202-EF-GCSCB-03 |
| **DESCRIPTIONS** | | **Technical Requirement** | | **Manufacturer Proposal** |
| Unit Location | | Roof | |  |
| Quantity | | 2 (1 Duty + 1 Standby) | |  |
| Type | | Utility Ex. Fan | |  |
| Location | | Battery Room (Extension) | |  |
| Service | | Exhaust | |  |
| Flow Rate (L/S) | | 520 | |  |
| External Static Pressure (Pa) | | 218.30 | |  |
| Maximum Fan RPM | | (\*) | |  |
| Motor | Type | Electrical Motor | |  |
| Horse Power | (\*) | |  |
| Voltage / Phase / Cycle | 400/3/50 | |  |
| Protection Class | IP-45 | |  |
| Fan Efficiency (%) | | (\*) | |  |
| Type Of Bearings | | Direct Driven Electric Motor | |  |
| Maximum Sound Level (db.) | | (\*) | |  |
| Allowable Outside/ Inside Noise Level @ 1 Meter From Unit (db) | | 45 (\*) | |  |
| Approximate Overall Dimensions (Mm) | | (\*) | |  |
| Approximate Operating Weight (Kg) | | (\*) | |  |
| Casing Material | | (\*) | |  |
| Propeller Material | | (\*) | |  |
| Fan Motor Shall Be Explosion Proof | | No | |  |
| Model | | (\*) | |  |
| Remarks : | | (\*) To Be Specified By Vendor | |  |

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| **UNIT IDENTITY** | | **REF. CODE FOR EQUIPMENT** | | |
| **TYPE** | **BLDG. NAME** | **TAG NO.** |
| Utility Ex. Fan | Control Building (Existing & Extension) | 1202-EF-GCSCB-04 |
| **DESCRIPTIONS** | | **Technical Requirement** | | **Manufacturer Proposal** |
| Unit Location | | Roof | |  |
| Quantity | | 2 (1 Duty + 1 Standby) | |  |
| Type | | Utility Ex. Fan | |  |
| Location | | Battery Room (Existing) | |  |
| Service | | Exhaust | |  |
| Flow Rate (L/S) | | 90 | |  |
| External Static Pressure (Pa) | | 213.60 | |  |
| Maximum Fan RPM | | (\*) | |  |
| Motor | Type | Electrical Motor | |  |
| Horse Power | (\*) | |  |
| Voltage / Phase / Cycle | 400/3/50 | |  |
| Protection Class | IP-45 | |  |
| Fan Efficiency (%) | | (\*) | |  |
| Type Of Bearings | | Direct Driven Electric Motor | |  |
| Maximum Sound Level (db.) | | (\*) | |  |
| Allowable Outside/ Inside Noise Level @ 1 Meter From Unit (db) | | 45 (\*) | |  |
| Approximate Overall Dimensions (Mm) | | (\*) | |  |
| Approximate Operating Weight (Kg) | | (\*) | |  |
| Casing Material | | (\*) | |  |
| Propeller Material | | (\*) | |  |
| Fan Motor Shall Be Explosion Proof | | No | |  |
| Model | | (\*) | |  |
| Remarks : | | (\*) To Be Specified By Vendor | |  |

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| --- | --- | --- | --- | --- |
| **UNIT IDENTITY** | | **REF. CODE FOR EQUIPMENT** | | |
| **TYPE** | **BLDG. NAME** | **TAG NO.** |
| Utility Ex. Fan | Control Building (Existing & Extension) | 1202-EF-GCSCB-05 |
| **DESCRIPTIONS** | | **Technical Requirement** | | **Manufacturer Proposal** |
| Unit Location | | Roof | |  |
| Quantity | | 1 | |  |
| Type | | Inline Axial Ex. Fan | |  |
| Location | | Lavatory + Shower + Locker (Existing) | |  |
| Service | | Exhaust | |  |
| Flow Rate (L/S) | | 335 | |  |
| External Static Pressure (Pa) | | 217.53 | |  |
| Maximum Fan RPM | | (\*) | |  |
| Motor | Type | Electrical Motor | |  |
| Horse Power | (\*) | |  |
| Voltage / Phase / Cycle | 400/3/50 | |  |
| Protection Class | IP-45 | |  |
| Fan Efficiency (%) | | (\*) | |  |
| Type Of Bearings | | Direct Driven Electric Motor | |  |
| Maximum Sound Level (db.) | | (\*) | |  |
| Allowable Outside/ Inside Noise Level @ 1 Meter From Unit (db) | | 45 (\*) | |  |
| Approximate Overall Dimensions (Mm) | | (\*) | |  |
| Approximate Operating Weight (Kg) | | (\*) | |  |
| Casing Material | | (\*) | |  |
| Propeller Material | | (\*) | |  |
| Fan Motor Shall Be Explosion Proof | | No | |  |
| Model | | (\*) | |  |
| Remarks : | | (\*) To Be Specified By Vendor | |  |

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