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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 |  |
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| **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**

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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-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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