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| **طرح نگهداشت و افزایش تولید 27 مخزن** |
| **DATA SHEETS FOR DC CHARGER - EXTENSION OF BINAK B/C MANIFOLD****نگهداشت و افزایش تولید میدان نفتی بینک** |
|  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |
| D02 | May. 2023 | AFD | H.Shakiba | M.Fakharian | A.M.Mohseni |  |
| D01 | Mar. 2023 | IFA | H.Shakiba | M.Fakharian | M.Mehrshad |  |
| D00 | Sep. 2022 | IFC | H.Shakiba | M.Fakharian | M.Mehrshad |  |
| **Rev.** | **Date** | **Purpose of Issue/Status** | **Prepared by:** | **Checked by:** | **Approved by:** | **Client Approval** |
| **Class: 2** | **Client Doc. Number: F0Z-709392** |
| **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 | X | X |  |  | **51** |  |  |  |  |  |
| **2** | X | X | X |  |  | **52** |  |  |  |  |  |
| **3** | X | X |  |  |  | **53** |  |  |  |  |  |
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| **TECHNICAL DATA FOR INDUSTRIAL FOR 24 VDC SYSTEM OF MANIFOLD** |
| --- |
| **Item** | **Description** | **Required** | **Vendor data** |
| **GENERAL** |
|  | Name of Project / Plant | Binak Oilfield in Bushehr Province |  |
|  | Applicable Code & Standard | IEC 62040,IPS-M-EL-174(2),IPS-E-EL-100(1) |  |
|  | Reference Documents | 1. DC Charger Single Line Diagram - Extension of Binak B/C Manifold

“BK-W007S-PEDCO-110-EL-SL-0003”1. Calculation Note for DC Charger System - Extension of Binak B/C Manifold

“BK-W007S-PEDCO-110-EL-CN-0001” |  |
|  | Service | 24 VDC for F&G System in Manifold |  |
|  | Tag Number | Manifold-24-CHG-001Manifold-24-CHG-002 |  |
|  | Ambient Temperature (Min/Max) | Min ~ Max: +5 ~ +52°C |  |
|  | Mean Sea Level: | 12.5 m above Sea Level |  |
|  | Location | Indoor |  |
|  | Max.Relative Humidity: | 100% |  |
|  | Seismic Factor: | 0.3g |  |
|  | Max. Wind Velocity(Max) | 120 km/hr |  |
|  | Manufacturer Model | By Vendor |  |
|  | Quantity | 1 Complete set (2×100% Charger) with commissioning and two years Spare Parts, Two battery bank(2×20cell), Battery Stand with special tools for Batteries, switch-fuse For Battery Banks: Exd IIC-T3 type. |  |
|  | Tag Number | Manifold-24-CHG-001 Manifold-24-CHG-002 |  |
| **AC INPUT** |
|  | Rectifiers Input Voltage | 380/400/440v, 3-Ph , 4 wire , 50 Hz |  |
|  | Rated Power | 16.39 kVA |  |
|  | Max.allowable input voltage variation | ±10% |  |
|  | Max.allowable input frequency variation | ±5% |  |
|  | Network short circuit current (rms) | 50 KA, 1s |  |
|  | Network short circuit current (Peak) | By Vendor |  |
|  | Max. short circuit clearing time | 1 sec |  |
|  | Max. power consumption | By Vendor |  |
|  | Input THDi% ( acc to IEEE-519 ) | <10% |  |
| **DC OUTPUT** |
|  | Rated voltage | 24 VDC |  |
|  | Max. Allowable Voltage Variation | ±1% |  |
|  | Rated Output Current (Amp) | 615 A |  |
|  | Allowable Ripple voltage (r.m.s ) | <1% |  |
|  | Overall Efficiency | >90% |  |
|  | Rectifier control voltage (Full Control) | 12 Pulse |  |
|  | Charger Topology | one in service, and one in hot standby(Vendor shall Advise) |  |
|  | Rectifier Input Filter type | R.F.I & Surge Arrester |  |
|  | Constant Voltage Control | Required |  |
|  | Constant Current Control | Required |  |
|  | Rectifier Over Load (%) | 110% Continues |  |
|  | Rectifiers Protection | Required |  |
|  | MCCB for AC Inputs | Required |  |
|  | MCCB for DC Output | Required |  |
|  | Ultra-Fast Fuse to Protect Thrusters | Required |  |
|  | Charger Output Fuse | Required |  |
|  | AC Input Voltmeter | Required |  |
|  | AC Input Ammeter | Required |  |
|  | Charger DC Voltmeter | Required |  |
|  | Charger DC Ammeter | Required |  |
|  | Charger DC LC Filter | Required |  |
|  | Load Current Ammeter | Required |  |
|  | Charger Selector Switch | Required |  |
|  | Battery Low DC Alarm (Indicator & Dry Contact) | Required |  |
|  | Load Low DC Alarm (Indicator & Dry Contact) | Required |  |
|  | Load Hi DC Alarm (Indicator & Dry Contact) | Required |  |
|  | Batteries Disconnected (Indicator) | Required |  |
| **BATTERY CHARGER CABINET** |
|  | Type | Flat face |  |
|  | Construction | Floor Mounted, Free Standing |  |
|  | Ingress protection class | IP42 |  |
|  | Access for maintenance | Front |  |
|  | Body material | Carbon Steel Sheet |  |
|  | Thickness of body material | Min.2 mm |  |
|  | Finish color | RAL 7032 |  |
|  | Cable entrance | Bottom and Cable Gland |  |
|  | Bottom closing method | By Vendor |  |
|  | Cooling method | Natural |  |
|  | Space Heater | Required |  |
|  | Illumination | Required |  |
|  | Noise level | 60dBA |  |
|  | Wiring | Power and Control Min.2.5mm², Metering Min.1.5mm² |  |
|  | Nameplate | English Black in White Background |  |
|  | Earthling System | IT |  |
| **BATTERIES** |
|  | Manufacturer | By Vendor |  |
|  | Manufacturer Model | By Vendor |  |
|  | Standard | IEC 60623, IEEE 1115 2014 |  |
|  | Quantity | 1 Complete set (2×50% Battery Bank) |  |
|  | Service | 24 VDC for F&G System |  |
|  | Applicable Specification | BK-GNRAL-PEDCO-000-EL-SP-0005 |  |
|  | Location | Indoor |  |
|  | Battery requirements | By Vendor |  |
|  | Battery type | Nickel-Cadmium (IEC60623) |  |
|  | Battery charging method | Constant Voltage-Dual Rate and Current Limit with Float/Auto/Equalize/Initial Mode charging |  |
|  | Back-up time | 24 Hr. + 5 Min |  |
|  | Emergency Mode Voltage for each cell (Activated by Battery Room Fan Failure) | 1.35 V ± 0.01 V |  |
|  | Battery float charging voltage | 1.42 V/Cell |  |
|  | Battery Equalize charging voltage ( 0-30Hr Timer and Reset Push Button are required) | 1.46/Cell |  |
|  | Battery boost charging voltage ( 0-30Hr Timer and Reset Push Button are required) | 1.55~1.65 V/Cell |  |
|  | Battery initial charging voltage ( 0-30Hr Timer and Returnable Switch are required) | 1.75 V/Cell |  |
|  | Battery nominal voltage | 1.2 V/Cell |  |
|  | Final discharge voltage per cell(V) | 1.14 V/Cell |  |
|  | Rated capacity of each cell at 20 ⁰C | 1350 Ah |  |
|  | Re-charging time to 90% Rated Capacity | 24 Hours |  |
|  | Required battery ampere-hour (C5) | 1350 Ah , SBLE Type |  |
|  | Total quantity of cells | 40 |  |
|  | No. of battery banks | 2 |  |
|  | No. of batteries per each bank | 20 |  |
|  | Battery cell dimension (W × D × H ) | By Vendor |  |
|  | Battery cell weight | By Vendor |  |
|  | Batteries shall be performed from SAFT,ALCAD Batteries | Required |  |
|  | All type of Batteries and Battery accessories shall be original and approved by Iranian representative | Required |  |
|  | Rate of H2 production during charging | Liter/Cell |  |
|  | Required air volume of exchange in battery room | m3/Hours |  |
|  | Required air volume of electrolyte | By Vendor |  |
|  | Composition of electrolyte | By Vendor |  |
|  | Required volume of electrolyte | Liter |  |
|  | Required Max. charging current | By Vendor |  |
| **DATA SHEET FOR BATTERY** |
|  | Battery Discharging Rate | Medium Rate |  |
|  | Container | Plastic |  |
|  | Construction | Vented |  |
| **ACCESSORIES & SPECIAL TOOLS** |
|  | Thermometer | Required |  |
|  | Hydrometer | Required |  |
|  | Voltmeter | Required |  |
|  | Battery Racks | Required (Seismic Factor:0.3g) |  |
|  | Flame Arrester | Required |  |
|  | Stand Type | By Vendor |  |
| **LOAD PROFILE GRAPH** |
|  |
|  | T1 :24 H |  |
|  | I1 :888 W |  |
|  | T2 : 5 Min |  |
|  | I2 : 1560 W |  |
| **DATA SHEET FOR DISTRIBUTION BOARD** |
|  | Standard | IEC,IPS-M-EL-174(2), IPS-E-EL-100(1) |  |
|  | Quantity | 1 Complete set |  |
|  | Service | DC Distribution Panel |  |
| **MECHANICAL SPECIFICATION** |
|  | Mounting type | Floor Mounted, Free Standing |  |
|  | Body martial | Carbon Steel Sheet |  |
|  | Thickness | Min.2 mm |  |
|  | Access for maintenance | Front |  |
|  | Protection class | IP42 |  |
|  | Illumination | Required |  |
|  | Space heater | Required |  |
|  | Weight | By Vendor |  |
|  | Dimensions | By Vendor |  |
|  | Name plate | English Black in White Background |  |
|  | Finished color | RAL 7032 |  |
| **ELECTRICAL SPECIFICATION** |
|  | Rated incoming voltage | 24 VDC |  |
|  | Rated insulation voltage | By Vendor |  |
|  | Wiring | Power and Control Min.2.5mm²,Metering Min.1.5mm², |  |
| **INCOMING** |
|  | Incoming Cables Size & Tag no. | BK-W007S-PEDCO-110-EL-LI-0002 |  |
|  | Entry Side | Bottom by Cable Gland |  |
|  | Cable Entry | Via Removable Gland Plate |  |
|  | Incoming Circuit breaker | MCCB |  |
|  | Terminal Type and quantity | By Vendor |  |
|  | Circuit breaker construction | Fix |  |
| **OUTGOING** |
|  | Outgoing cable size and tag no. | BK-W007S-PEDCO-110-EL-LI-0002 |  |
|  | Entry side | Bottom by Cable Gland |  |
| **DATA SHEET FOR DISTRIBUTION BOARD** |
|  | Cable entry | Via Removable Gland Plate |  |
|  | Outgoing circuit breaker | MCCB |  |
|  | Circuit breaker constructor | Fix |  |
| **INDICATING LIGHTS , ALARMS AND ACCESSORIES** |
|  | Battery Low DC alarm | Required ,With Dry Contacts |  |
|  | Load Low DC alarm | Required ,With Dry Contacts |  |
|  | Load Hi DC alarm | Required ,With Dry Contacts |  |
|  | Batteries disconnected | Required |  |
|  | Battery voltmeter | Required |  |
|  | Battery ammeter | Required |  |
|  | Load voltmeter | Required |  |
|  | Load ammeter | Required |  |
|  | Cable gland | Required |  |
|  | Removable gland plate | Required |  |
| **TESTS ( Factory Acceptance test and Site Acceptance Test shall be performed By the Vendor )** |
|  | Visual Inspection & Dimensional Check | Required |  |
|  | Performance and Function Test | Required |  |
|  | Sequence , Operation and Logic Test | Required |  |
|  | Dielectric Strength Test | Required |  |
|  | Output Voltage and Ripple Check | Required |  |
|  | Charger Voltage Adjustment Test | Required |  |
|  | THDi% Check | Required |  |
|  | Output Regulation / Adjustments Test | Required |  |
|  | Alarms Check | Required |  |
|  | Autonomy Test | Required |  |
|  | Current Limit Test | Required |  |
|  | Short Circuit test | Required |  |
|  | Other Tests shall be performed in Accordance with IEC60146 (Battery Charger Testing) | Required |  |
|  | Hardware and Software for Communication, Programming or Setting up the CPU or MPU Boards (If Required), | Required |  |
| **ACCESSORIES AND SPECIAL TOOLS** |
|  | MIMIC Panel With LED To Show Operation Condition (shall be finalized by vendor). | Required |  |
|  | Commissioning and two years spare parts shall be provided | Required |  |
|  | The Accuracy of all meters shall be better than 1.5% | Required |  |
|  | On load break switch-fuse For Battery Banks:Exd type IIC-T3 | Required |  |
|  | Training | The Supplier /Vendor shall be assumed the maintenance and repair training course at least for 5 People |  |
|  | Battery Room Fan failure (Activated by external Signal ) | Required |  |
| **ELECTROMAGNETIC COMPATIBILITY (EMC)** |
| **NOTE:**1. All DC-UPS units shall comply with the requirements for EMC as defined in IEC 62040-2, in order to ensure: Conducted emissions in both, the power supply input and output of the DC- UPS are controlled within acceptable limits; Any electromagnetic disturbance generated by the UPS and its individual components do not exceed a level which would affect the correct operation of both, radio and telecommunications equipment; The DC-UPS has an adequate level of intrinsic immunity to external electromagnetic- and conducted disturbance to enable it to operate as intended. |