

|  | <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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| شماره پیمان: ۰۵۳ - ۰۷۳ - ۹۱۸۴ | <table><tr><th colspan="8">TBE FOR LV SWITCHGEAR, MCC & LV CAPACITOR BANK</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>EL</td><td>TB</td><td>0002</td><td>D00</td></tr></table> | TBE FOR LV SWITCHGEAR, MCC & LV CAPACITOR BANK | | | | | | | | پروژه | بسته کاری | صادر کننده | تسهیلات | رشته | نوع مدرک | سریال | نسخه | BK | GCS | PEDCO | 120 | EL | TB | 0002 | D00 | شماره صفحه: ۱ از ۱۸ |
| TBE FOR LV SWITCHGEAR, MCC & LV CAPACITOR BANK | | | | | | | | | | | | | | | | | | | | | | | | | | |
| پروژه | بسته کاری | صادر کننده | تسهیلات | رشته | نوع مدرک | سریال | نسخه | | | | | | | | | | | | | | | | | | | |
| BK | GCS | PEDCO | 120 | EL | TB | 0002 | D00 | | | | | | | | | | | | | | | | | | | |

طرح نگهداشت و افزایش تولید 27 مخزن

TBE FOR LV SWITCHGEAR, MCC & LV CAPACITOR BANK

نگهداشت و افزایش تولید میدان نفتی بینک

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| D00 | Nov. 2024 | IFI | M.Pourdasht | M.Fakharian | M.Sadeghian | |
| Rev. | Date | Purpose of Issue/Status | Prepared by: | Checked by: | Approved by: | Client Approval |
| Class:3 | | Client Doc. Number: F0Z-709330 | | | | |

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

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| پروژه | بسته کاری | صادر کننده | تسهیلات | رشته | نوع مدرک | سریال | نسخه | | | | | | | | | | | |
| BK | GCS | PEDCO | 120 | EL | TB | 0002 | D00 | | | | | | | | | | | |

REVISION RECORD SHEET

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|  | <div>نگهداشت و افزایش تولید میدان نفتی بینک</div> <div>سطح الارض</div> <div>احداث ردیف تراکم گاز در ایستگاه جمع آوری بینک</div> | | | | | | | |  |
| شماره پیمان: ۰۵۳ - ۰۷۳ - ۹۱۸۴ | TBE FOR LV SWITCHGEAR, MCC & LV CAPACITOR BANK | | | | | | | | شماره صفحه: ۳ از ۱۸ |
| | نسخه | سریال | نوع مدرک | رشته | تهیهات | صادرکننده | بسته کاری | پروژه | |
| | D00 | 0002 | TB | EL | 120 | PEDCO | GCS | BK | |

| TBE for LV Switchgear | | | | | | | | | | |
|-----------------------|---|---|---------------------------------------|--------|-------------------|--------|----------------------------------|--------|--------------------|--------|
| MR | PMR For LV Switchgear, MCC & LV Capacitor Bank (BK-GCS-PEDCO-120-EL-MR-0002) | Purchaser Requirement | Ista Noavaran Niroo | Status | Pars Tableau | Status | Taban Tablo Shargh | Status | Runin Sanat | Status |
| Item | Description | | | | | | | | | |
| 1. General | | | | | | | | | | |
| 1.1 | Name of Project / Plant | Binak Oilfield in Bushehr Province | Confirmed | A | Confirmed | A | Confirmed | A | Confirmed | A |
| 1.2 | Reference Doc. | 1- IPS-M-EL-143(3) 2- LV Switchgear/MCC Single Line Diagram (BK-GCS-PEDCO-120-EL-SL-0002) 3- Specification For LV Switchgear & Motor Control Centers (BK-GNRAL-PEDCO-000-EL-SP-0001) 4- Electrical Typical Schematic Diagrams For LV Panel (BK-GCS-PEDCO-120-EL-DG-0002) 5- Electrical System Design Criteria (BK-GNRAL-PEDCO-000-EL-DC-0001) 6- Process Basis of Design (BK-GNRAL-PEDCO-000-PR-DB-0001) | Confirmed | A | Confirmed | A | Confirmed | A | Confirmed | A |
| 1.3 | Manufacturer of Cubicles | By Vendor | Ista Noavaran Niroo Co | A | Pars Tableau | A | Taban Tablo Co | A | Runin Sanat Gostar | A |
| 1.4 | Manufacturer Type No./Country Origin | By Vendor | Sivacon 8PT / Siemens | A | DNF6-Iran | A | Sivacon 8pt | A | Iran | C |
| 1.5 | Standard | IEC60439, IEC60947, IPS-M-EL-143(3) | IEC61439-1, IEC60947, IPS-M-EL-143(3) | A | Confirmed | A | Confirmed | A | Confirmed | A |
| 1.6 | Type Of Cubicle - Fixed/ With draw able | With Draw Able | Confirmed | A | Confirmed | A | Confirmed | A | Confirmed | A |
| 1.7 | Rated Voltage & Variation | 400 VAC & ± 10% | 400 VAC & ± 5% | A | Confirmed | A | Confirmed | A | Confirmed | A |
| 1.8 | Rated Frequency & Variation | 50 HZ & ± 5% | Confirmed | A | Confirmed | A | Confirmed | A | Confirmed | A |
| 1.9 | Service Voltage | 400 VAC | Confirmed | A | Confirmed | A | Confirmed | A | Confirmed | A |
| 1.10 | Number Of Phases | 3PH + PE + N | Confirmed | A | Confirmed | A | Confirmed | A | Confirmed | A |
| 1.11 | Number of Cubicles (With Spare) | By Vendor | 18 | A | Acc To Tech Offer | | Pls refer to our technical offer | | 20 | A |
| 1.12 | Number of Bus Sections | 3 | Confirmed | A | Confirmed | A | Confirmed | A | Confirmed | A |
| 1.13 | Power Frequency (One Min) | 1.89 KV (ACC to Table 8 of IEC 61439-1) | Confirmed | A | Confirmed | A | Confirmed | A | Confirmed | A |
| 1.14 | Impulse Withstand | 6 KV (ACC to Table G.1 of IEC 61439-1) | Confirmed | A | Confirmed | A | Confirmed | A | Confirmed | A |
| 1.15 | Rated Normal Current of Bus bars | 2000 A | Confirmed | A | Confirmed | A | Confirmed | A | Confirmed | A |

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| | نسخه | سریال | نوع مدرک | رشته | تسهیلات | صادرکننده | بسته کاری | |
| | D00 | 0002 | TB | EL | 120 | PEDCO | GCS | |
| | پروژه | | BK | | | | | |

| TBE for LV Switchgear | | | | | | | | | | |
|---|--|---|--|--------|--------------|--------|--------------------|--------|---|--------|
| MR | PMR For LV Switchgear, MCC & LV Capacitor Bank (BK-GCS-PEDCO-120-EL-MR-0002) | Purchaser Requirement | Ista Noavaran Niroo | Status | Pars Tableau | Status | Taban Tablo Shargh | Status | Runin Sanat | Status |
| Item | Description | | | | | | | | | |
| 1.16 | Rated Short Current of Bus bars | 50 KA | Confirmed | A | Confirmed | A | Confirmed | A | Confirmed | A |
| 1.17 | Rated Peak Withstand Current | 125 KA | Based IEC 61439-1 Table 7 (Peak current) is considered 105kA | A | Confirmed | A | Confirmed | A | Confirmed | A |
| 1.18 | Rated Short Time Duration | 1 SEC. | Confirmed | A | Confirmed | A | Confirmed | A | Confirmed | A |
| 1.19 | System Earthing | Solidly Earthed At Transformer Neutral Point | Confirmed | A | Confirmed | A | Confirmed | A | Confirmed | A |
| 1.20 | Voltage of Control Circuit | Incoming/Tie: 110 VDC Outgoing: 230 VAC (by Isolation Transformer for each Cubicle, According to BK-GCS-PEDCO-120-EL-SL-0002 | Confirmed | A | Confirmed | A | Confirmed | A | Confirmed | A |
| 1.21 | Incoming Feeder Signaling Circuit | 110 VDC | Confirmed | A | Confirmed | A | Confirmed | A | Confirmed | A |
| 1.22 | Motor & Heater Outgoing Feeder Signaling Circuit | 230 VAC | Confirmed | A | Confirmed | A | Confirmed | A | Confirmed | A |
| 1.23 | Distribution Outgoing Feeder Signaling Circuit | 230 VAC | Confirmed | A | Confirmed | A | Confirmed | A | Confirmed | A |
| 1.24 | Panel Light Auto. Door Micro Switch Operated | 230 VAC | Confirmed | A | Confirmed | A | Confirmed | A | Confirmed | A |
| 1.25 | Internal Safety Interlocks | Yes | Confirmed | A | Confirmed | A | Confirmed | A | Confirmed | A |
| 2. Environmental Conditions (Process Basis Design, BK-GNRAL-PEDCO-000-PR-DB-0001) | | | | | | | | | | |
| 2.1 | Installation | Indoor, Safe Area | Confirmed | A | Confirmed | A | Confirmed | A | Confirmed | A |
| 2.2 | Max. Ambient Temperature | 52 °C | Design Temp is 40 °C | C | Confirmed | A | Confirmed | A | Design Temperature Was Considered 40 °C | C |
| 2.3 | Min. Ambient Temperature | 5 °C | Confirmed | A | Confirmed | A | Confirmed | A | Confirmed | A |
| 2.4 | Relative Humidity (Max.) | 100% | Confirmed | A | Confirmed | A | Confirmed | A | Confirmed | A |
| 2.5 | Climate | Corrosive, Hot Atmosphere | Confirmed | A | Confirmed | A | Confirmed | A | Confirmed | A |
| 2.6 | Altitude Above Sea Level | 12.5 m | Confirmed | A | Confirmed | A | Confirmed | A | Confirmed | A |
| 3. Cubicle Construction | | | | | | | | | | |
| 3.1 | Enclosure | Metal Clad | Confirmed | A | Confirmed | A | Confirmed | A | Confirmed | A |
| 3.2 | Indoor / Outdoor | Indoor | Confirmed | A | Confirmed | A | Confirmed | A | Confirmed | A |

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| | BK | | | | | | | |

| TBE for LV Switchgear | | | | | | | | | | |
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| Item | Description | | | | | | | | | |
| 3.3 | Type of Installation | Floor Standing | Confirmed | A | Confirmed | A | Confirmed | A | Confirmed | A |
| 3.4 | Bus Bar Material | Hard Drown, High Conductivity Copper | Confirmed | A | Confirmed | A | Confirmed | A | Confirmed | A |
| 3.5 | Main Bus Bar Insulation Material | Flame Retardant, Non Hygroscopic Insulation Material | Confirmed | A | Confirmed | A | Confirmed | A | Confirmed | A |
| 3.6 | Bus Bar color | L1: Red , L2: Yellow , L3: Blue , N: Black | Confirmed | A | Confirmed | A | Confirmed | A | Confirmed | A |
| 3.7 | Shape of Main Bus Bars | By Vendor | Based on Siemens Standard | A | Acc To Tech Offer | C | 2*80*10 Per phase | A | After contract | A |
| 3.8 | Neutral Bus Bar Cross Section | By Vendor | Based on Siemens Standard | A | Acc To Tech Offer | C | 1*80*10 | A | After contract | A |
| 3.9 | Type / Material of Main Bus Bar Supporting Insulators | By Vendor | Based on Siemens Standard | A | Acc To Tech Offer | C | 1*80*10 | A | After contract | A |
| 3.10 | Bus Bar Joints | Silver Plated | Confirmed | A | Confirmed | A | Tin plated (Main busbar, not only joint) | C | Confirmed | A |
| 3.11 | Bus Bar Identification | By Vendor | Based on Siemens Standard | A | Acc To Tech Offer | C | Label | A | After contract | A |
| 3.12 | Bus Bar Arrangement (Single / Duplicate) | By Vendor | Based on Siemens Standard | A | Acc To Tech Offer | C | Duplicate | A | After contract | A |
| 3.13 | Phase Bus Bar Cross Section | By Vendor | Based on Siemens Standard | A | Acc To Tech Offer | C | 2*80*10 Per phase | A | After contract | A |
| 3.14 | Earth Bus Bar Cross Section | By Vendor | Based on Siemens Standard | A | Acc To Tech Offer | C | 1*40*10 | A | After contract | A |
| 3.15 | Bus bar Cooling Method | Air Natural | Confirmed | A | Confirmed | A | Confirmed | A | Confirmed | A |
| 3.16 | Rear / Front Access | Front Access | Rear Access (limited space in the switchgear room) | A | Confirmed | A | Rear Access (limited space in the switchgear room) | A | Confirmed | A |
| 3.17 | Incomings / Outgoings To/From The Switchgear (Bus-Duct/Cable) | Incomings: Cable Outgoings: Cable | Confirmed Confirmed | A | Confirmed | A | Confirmed | A | Confirmed | A |
| 3.18 | Top / Bottom Entry | Cable: Bottom | Confirmed | A | Confirmed | A | Confirmed | A | Confirmed | A |
| 3.19 | Degree of Protection | IP42 | Confirmed | A | Confirmed | A | Confirmed | A | Confirmed | A |
| 3.20 | Min. Cubicle Sheet & Door Thickness For Enclosure | 2 mm | Confirmed | A | Confirmed | A | 2 mm for body enclosure | C | Confirmed | A |
| 3.21 | Tropic Design | Yes | Confirmed | A | Confirmed | A | Confirmed | A | Confirmed | A |
| 3.22 | Provision For Extension at Each End of Switchgear | Yes | Confirmed | A | Confirmed | A | Confirmed | A | Confirmed | A |
| 3.23 | Paint Color Shade | Ral 7032 (Light Grey) | Confirmed | A | Confirmed | A | Confirmed | A | Confirmed | A |

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| TBE for LV Switchgear | | | | | | | | | | |
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| Item | Description | | | | | | | | | |
| 3.24 | Thickness of Paint Coating | 60 – 80 Micron | Confirmed | A | Confirmed | A | Confirmed | A | 80-120 Micron | C |
| 4. Circuit Breaker (ACB) | | | | | | | | | | |
| 4.1 | Manufacturer / Country | By Vendor | ABB/SIEMENS West Europe | A | Schneider | A | ABB | A | Schneider | A |
| 4.2 | Manufacturer Type No. | By Vendor | 3WL/3VA/Emax | A | NW/NT | A | Emax | A | NW/NT | A |
| 4.3 | Type Of Main CB (Air / Vacuum / Others) | Air | Confirmed | A | Confirmed | A | Confirmed | A | Confirmed | A |
| 4.4 | No. of Poles in Main ACB | 4 Pole | Confirmed | A | Confirmed | A | Confirmed | A | Confirmed | A |
| 4.5 | Rated Insulation Voltage | 1000 VAC | Confirmed | A | Confirmed | A | Confirmed | A | Confirmed | A |
| 4.6 | Rated Operating Voltage | 400 VAC | Confirmed | A | Confirmed | A | Confirmed | A | Confirmed | A |
| 4.7 | Rated Current | By Vendor, Based on Load List (BK-GCS-PEDCO-120-EL-LI-0001) | Confirmed | A | Confirmed | A | Confirmed | A | Confirmed | A |
| 4.8 | Rated Breaking Current * | 50 KA | Confirmed | A | Confirmed | A | Confirmed | A | Confirmed | A |
| 4.9 | Rated Making Current * | 125 KA | Based on IEC 61439-1 : 105kA | A | Confirmed | A | Confirmed | A | Confirmed | A |
| 4.10 | S/C Withstanding Time | 1 SEC. | Confirmed | A | Confirmed | A | Confirmed | A | Confirmed | A |
| 4.11 | Closing Time | By Vendor | 5-10 s | A | Acc To Catalog | A | 5-10 s | A | After contract | C |
| 4.12 | Tripping Time | By Vendor | 40 ms | A | Acc To Catalog | A | 40 ms | A | After contract | C |
| 4.13 | Rated Electrical Life | By Vendor | 10000 | A | Acc To Catalog | A | 10000 | A | After contract | C |
| 4.14 | Power Consumption of Closing Coil | By Vendor | 5~10W | A | Acc To Catalog | A | 5~10W | A | After contract | C |
| 4.15 | Power Consumption of Tripping Coil | By Vendor | 5~10W | A | Acc To Catalog | A | 5~10W | A | After contract | C |
| 4.16 | Power Consumption of Spring Charging Motor | By Vendor | 60~90W | A | Acc To Catalog | A | 60~90W | A | After contract | C |
| 4.17 | Spring Charge Motor Voltage Supply | 110 VDC | Confirmed | A | Confirmed | A | Confirmed | A | Confirmed | A |
| 4.18 | No. of Circuit Breaker Operating With Charged Spring | 5 | Confirmed | A | Confirmed | A | Confirmed | A | Confirmed | A |
| 4.19 | Anti-Pumping Feature | Yes | Confirmed | A | Confirmed | A | Confirmed | A | It Is Not Considered | C |
| 4.20 | Shutters | Yes | Confirmed | A | Confirmed | A | Confirmed | A | Confirmed | A |

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|---|---|-------|----------|------|--------|-----------|-----------|-------|---|
|  | <div>نگهداشت و افزایش تولید میدان نفتی بینک</div> <div>سطح الارض</div> <div>احداث ردیف تراکم گاز در ایستگاه جمع آوری بینک</div> | | | | | | | |  |
| شماره پیمان: ۰۵۳ - ۰۷۳ - ۹۱۸۴ | TBE FOR LV SWITCHGEAR, MCC & LV CAPACITOR BANK | | | | | | | | شماره صفحه: ۲ از ۱۸ |
| | نسخه | سریال | نوع مدرک | رشته | تهیهات | صادرکننده | بسته کاری | پروژه | |
| | D00 | 0002 | TB | EL | 120 | PEDCO | GCS | BK | |

| TBE for LV Switchgear | | | | | | | | | | |
|-----------------------|--|--|-----------------------------------|--------|----------------|--------|--------------------|--------|-----------------------------|--------|
| MR | PMR For LV Switchgear, MCC & LV Capacitor Bank (BK-GCS-PEDCO-120-EL-MR-0002) | Purchaser Requirement | Ista Noavaran Niroo | Status | Pars Tableau | Status | Taban Tablo Shargh | Status | Runin Sanat | Status |
| Item | Description | | | | | | | | | |
| 4.21 | Additional Auxiliary Contacts | By Vendor | If Required | A | Acc To Catalog | A | By Aux Relay | A | Refer to technical proposal | A |
| 4.22 | Closed/Open Position Indication | Yes | Confirmed | A | Confirmed | A | Confirmed | A | Confirmed | A |
| 4.23 | Charged/Discharged Spring Indication | Yes | Confirmed | A | Confirmed | A | Confirmed | A | Confirmed | A |
| 5. MCCB | | | | | | | | | | |
| 5.1 | Manufacturer of MCCB | By Vendor | ABB/SIEMENS west Europe | A | Schneider | A | ABB | A | Schneider | A |
| 5.2 | Rated Insulation Voltage | 1000 VAC | 690/1000 VAC | A | Confirmed | A | Confirmed | A | Confirmed | A |
| 5.3 | Rated Operating Voltage | 400 VAC | Confirmed | A | Confirmed | A | Confirmed | A | Confirmed | A |
| 5.4 | Rated Current | According to “BK-GCS-PEDCO-120-EL-SL-0002” | Confirmed | A | Confirmed | A | Confirmed | A | Confirmed | A |
| 5.5 | NO. of Poles | 3 Pole | Confirmed | A | Confirmed | A | Confirmed | A | Confirmed | A |
| 6. Switch-Fuse | | | | | | | | | | |
| 6.1 | Manufacturer of Switch-Fuse | By Vendor | ETI / PICHAZ / ZAVIR SIEMENS /ABB | A | Schneider | A | ABB / ETI | A | NOARK | C |
| 6.2 | Rated Insulation Voltage | 1000 VAC | 800/1000 VAC | A | Confirmed | A | Confirmed | A | Confirmed | A |
| 6.3 | Rated Operating Voltage | 400 VAC | Confirmed | A | Confirmed | A | Confirmed | A | Confirmed | A |
| 6.4 | Rated Current | According to “BK-GCS-PEDCO-120-EL-SL-0002” | Confirmed | A | Confirmed | A | Confirmed | A | Confirmed | A |
| 6.5 | NO. of Poles | 3 Pole | Confirmed | A | Confirmed | A | Confirmed | A | Confirmed | A |
| 7. Contactor | | | | | | | | | | |
| 7.1 | Manufacturer Country | By Vendor | ABB/Siemens | A | Schneider | A | ABB | A | Schneider | A |
| 7.2 | Manufacturer Type No. | By Vendor | 3RT/AF | A | LC | A | AC3 | A | LC1D | A |
| 7.3 | Type of Contactor (Air / Vacuum) | Air/AC3 | Confirmed | A | Confirmed | A | Confirmed | A | Confirmed | A |
| 7.4 | Rated Insulation Voltage | 1000 VAC | Confirmed | A | Confirmed | A | Confirmed | A | Confirmed | A |
| 7.5 | Rated Operating Voltage | 400 VAC | Confirmed | A | Confirmed | A | Confirmed | A | Confirmed | A |
| 7.6 | Rated Current | By Vendor, Based On SLD | Confirmed | A | Confirmed | A | Confirmed | A | Confirmed | A |

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|  | <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 | TBE FOR LV SWITCHGEAR, MCC & LV CAPACITOR BANK | | | | | | | شماره صفحه: ۸ از ۱۸ |
| | نسخه | سریال | نوع مدرک | رشته | تسهیلات | صادرکننده | بسته کاری | |
| | D00 | 0002 | TB | EL | 120 | PEDCO | GCS | |
| | پروژه | BK | | | | | | |

| TBE for LV Switchgear | | | | | | | | | | |
|-----------------------|--|---|---------------------|--------|----------------|--------|--------------------|--------|----------------|--------|
| MR | PMR For LV Switchgear, MCC & LV Capacitor Bank (BK-GCS-PEDCO-120-EL-MR-0002) | Purchaser Requirement | Ista Noavaran Niroo | Status | Pars Tableau | Status | Taban Tablo Shargh | Status | Runin Sanat | Status |
| Item | Description | | | | | | | | | |
| 7.7 | Closing Time | By Vendor | 4~70mS | A | Acc To Catalog | A | 4~70mS | A | After contract | A |
| 7.8 | Tripping Time | By Vendor | 3~5mS | A | Acc To Catalog | A | 3~5mS | A | After contract | A |
| 7.9 | Power Consumption of Elec. Bobbin | By Vendor | 2W | A | Acc To Catalog | A | 2W | A | After contract | A |
| 7.10 | Rated Electrical Life | By Vendor | 15000 | A | Acc To Catalog | A | 15000 | A | After contract | A |
| 7.11 | Rated Short Circuit Life | By Vendor | 20000 | A | Acc To Catalog | A | 20000 | A | After contract | A |
| 7.12 | Elect. Bobbin Voltage Supply | 230 VAC | Confirmed | A | Confirmed | A | Confirmed | A | Confirmed | A |
| 7.13 | Utilization Category | By Vendor | AC3 | A | AC3 | A | AC3 | A | After contract | A |
| 7.14 | RC Element | Where Is Applicable | Confirmed | A | Confirmed | A | Confirmed | A | Confirmed | A |
| 7.15 | NO. of Poles | 3 Pole | Confirmed | A | Confirmed | A | Confirmed | A | Confirmed | A |
| 8. Thermal Relays | | | | | | | | | | |
| 8.1 | Manufacturer Country | By Vendor | ABB/Siemens | A | Schneider | A | ABB | A | Schneider | A |
| 8.2 | Manufacturer Type No. | By Vendor | 3RB/RT | A | LRD | A | Thermal | A | LRD | A |
| 8.3 | Rated Operating Voltage | 400 VAC | Confirmed | A | Confirmed | A | Confirmed | A | Confirmed | A |
| 8.4 | Single Phasing Protection | Yes | Confirmed | A | Confirmed | A | Confirmed | A | Confirmed | A |
| 8.5 | Thermal Relay Adjustable Range | By Vendor (ACC to Coordination type 2) , According to “BK-GCS-PEDCO-120-EL-SL-0002” | Confirmed | A | Confirmed | A | Confirmed | A | Confirmed | A |
| 8.6 | Thermal Relay Reset Feature | Yes Via a Door Mounted Push-Button | Confirmed | A | Confirmed | A | Confirmed | A | Confirmed | A |
| 9. PT'S-FIXED TYPE | | | | | | | | | | |
| 9.1 | Manufacturer Country | By Vendor | Zafar/ Azmoon Trans | A | Azmoon Trans | A | Azmoon Trans | A | Azmoon Trans | A |
| 9.2 | Rated Operating Voltage | 400/√3 VAC | Confirmed | A | Confirmed | A | Confirmed | A | Confirmed | A |
| 9.3 | Rated Secondary Voltage | 110/√3 VAC , 230/√3 VAC | Confirmed | A | Confirmed | A | Confirmed | A | Confirmed | A |
| 9.4 | Accuracy Class | Measuring : 1 Protection : 3P | Confirmed | A | Confirmed | A | Confirmed | A | Confirmed | A |
| 9.5 | Burden | By Vendor | 5 VA | A | 20 VA | A | 15 VA | A | 50 VA | A |

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|  | <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 | TBE FOR LV SWITCHGEAR, MCC & LV CAPACITOR BANK | | | | | | | شماره صفحه: ۹ از ۱۸ |
| | نسخه | سریال | نوع مدرک | رشته | تسهیلات | صادرکننده | بسته کاری | |
| | D00 | 0002 | TB | EL | 120 | PEDCO | GCS | |
| | BK | | | | | | | |

| TBE for LV Switchgear | | | | | | | | | | |
|--------------------------------|--|--------------------------------------|---------------------|--------|----------------|--------|--------------------|--------|----------------|--------|
| MR | PMR For LV Switchgear, MCC & LV Capacitor Bank (BK-GCS-PEDCO-120-EL-MR-0002) | Purchaser Requirement | Ista Noavaran Niroo | Status | Pars Tableau | Status | Taban Tablo Shargh | Status | Runin Sanat | Status |
| Item | Description | | | | | | | | | |
| 9.6 | Single-Phase / Three-Phase | 3 Phase | Confirmed | A | Confirmed | A | Confirmed | A | Confirmed | A |
| 9.7 | Rated Voltage Factor | By Vendor | At detail stage | A | Acc To Catalog | A | 230 | A | After contract | A |
| 10. CTs | | | | | | | | | | |
| 10.1 | Manufacturer Country | By Vendor | Mag Electric | A | Mag Electric | A | Mag Electric | A | Novin Harris | C |
| 10.2 | Rated Operating Voltage | 400 VAC | Confirmed | A | Confirmed | A | Confirmed | A | Confirmed | A |
| 10.3 | Rated Primary Current | By Vendor, Based on SLD | Confirmed | A | Confirmed | A | Confirmed | A | Confirmed | A |
| 10.4 | Rated Secondary Current | 1 A | Confirmed | A | Confirmed | A | Confirmed | A | Confirmed | A |
| 10.5 | Insulation Class | By Vendor | E | A | F | A | F | A | F | A |
| 10.6 | Accuracy Class | Measuring: 1 Protection: 5P10 | Confirmed | A | Confirmed | A | Confirmed | A | Confirmed | A |
| 11. Protection | | | | | | | | | | |
| 11.1 | Manufacturer Country | By Vendor | Built-in type | C | Schneider | A | Schneider | A | Schneider | A |
| 11.2 | Manufacturer Designation No. | By Vendor | - | C | Eassergy | A | Eassergy | A | Eassergy | A |
| 11.3 | Type of Protection Relays For Incomers/Tie | Multi-Function, Microprocessor Based | - | C | P3 | A | P3 | A | P3 | A |
| 11.4 | No. of Contacts | MIN. 4 | - | C | Confirmed | A | Confirmed | A | Confirmed | A |
| 11.5 | Contact Rating Current | 5 A | - | C | Confirmed | A | Confirmed | A | Confirmed | A |
| 11.6 | Auto Diagnostic & Self Supervision | Yes | - | C | Confirmed | A | Confirmed | A | Confirmed | A |
| 11.7 | Serial Link Communication Port | Yes | - | C | Confirmed | A | Confirmed | A | Confirmed | A |
| 12. Measuring & Control System | | | | | | | | | | |
| 12.1 | Manufacturer of Indicators / Country | By Vendor | Ziegler | A | Schneider | A | Schneider | A | BEW | C |
| 12.2 | Accuracy Class Of Indicators | CL.1 | CL: 1.5 | C | Confirmed | A | Confirmed | A | 1.5 | C |
| 12.3 | Manufacturer of Selector Switch | By Vendor | TRS | A | KAVEH | A | Trs / Raad | A | Schneider | A |
| 12.4 | Manufacturer of Push Buttons | By Vendor | Schneider/Raad | A | Schneider | A | Raad | C | Schneider | A |

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|  | <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 | TBE FOR LV SWITCHGEAR, MCC & LV CAPACITOR BANK | | | | | | | شماره صفحه : ۱۰ از ۱۸ |
| | نسخه | سریال | نوع مدرک | رشته | تسهیلات | صادرکننده | بسته کاری | |
| | D00 | 0002 | TB | EL | 120 | PEDCO | GCS | |
| | BK | | | | | | | |

| TBE for LV Switchgear | | | | | | | | | | |
|-----------------------|--|--|------------------------|--------|--------------------|--------|------------------------|--------|------------------------|--------|
| MR | PMR For LV Switchgear, MCC & LV Capacitor Bank (BK-GCS-PEDCO-120-EL-MR-0002) | Purchaser Requirement | Ista Noavaran Niroo | Status | Pars Tableau | Status | Taban Tablo Shargh | Status | Runin Sanat | Status |
| Item | Description | | | | | | | | | |
| 12.5 | Manufacturer of Indication Lamps | By Vendor | Schneider/Raad | A | Schneider | A | Raad | C | Schneider | A |
| 12.6 | Manufacturer of Terminals | By Vendor | Raad | A | Raad | A | Raad | A | Raad | A |
| 12.7 | Manufacturer of AUX. Relays | By Vendor | Omron | A | Weidmueller | A | Omron | A | Weidmueller | A |
| 12.8 | Remote Control Indication / Alarm / Inter trip / ET C. | Yes | Confirmed | A | Confirmed | A | Confirmed | A | Confirmed | A |
| 12.9 | Mimic Diagram | Not Applicable | Confirmed | A | Confirmed | A | Confirmed | A | Confirmed | A |
| 12.10 | Size of Control Wiring | 2.5 mm2 for CT'S 1.5 mm2 for Other | Confirmed | A | Confirmed | A | Confirmed | A | Confirmed | A |
| 12.11 | Ammeter / Voltmeter Manufacture | By Vendor | Ziegler | A | BEW | C | BEW | C | BEW | C |
| 12.12 | Ammeter / Voltmeter Class | CL.1 | CL: 1.5 | C | Confirmed | A | Confirmed | A | 1.5 | C |
| 12.13 | Ammeter / Voltmeter range | According to “BK-GCS-PEDCO-120-EL-SL-0002” | Confirmed | A | Confirmed | A | Confirmed | A | Confirmed | A |
| 12.14 | Multi Meters Manufacture | By Vendor | Schneider | A | Schneider | A | DM6200 Schneider | A | Schneider | A |
| 12.15 | Multi Meters Class | CL.0.5 | Confirmed | A | Confirmed | A | Confirmed | A | 1 | C |
| 13. Miscellaneous | | | | | | | | | | |
| 13.1 | Routine Tests Foreseen | Yes | Confirmed | A | Confirmed | A | Confirmed | A | Confirmed | A |
| 13.2 | Type Tests Foreseen | No, If Certified | Confirmed | A | Confirmed | A | Confirmed | A | Confirmed | A |
| 13.3 | Two Years Op. & Comis. Spare Parts Proposed | Yes | Confirmed | A | Confirmed | A | Confirmed | A | Confirmed | A |
| 13.4 | Special Tools | Yes, If Required | Confirmed | A | Confirmed | A | Confirmed | A | Confirmed | A |
| 13.5 | Accessories | Yes | Confirmed | A | Confirmed | A | Confirmed | A | Confirmed | A |
| 13.6 | Mimic Diagram for Each Cubicle | Yes for Incoming | Confirmed | A | Confirmed | A | Confirmed | A | Confirmed | A |
| 13.7 | Dimension of One Cubicle (H X W X D) | By Vendor | 2200*800*600 / 1200 mm | C | 2350*900*1800 | A | 2200*800*600 / 1000 mm | C | 2200*800*600 / 1000 mm | C |
| 13.8 | Overall Dimension (H X W X D) | By Vendor | After Detail Desig | A | After Detail Desig | A | After Detail Desig | A | After Detail Desig | C |
| 13.9 | Weight of One Cubicle | By Vendor | 250~320 Kg per cel | A | 250~320 Kg per cel | A | 250~320 Kg per cel | A | 250~320 Kg per cel | A |
| 13.10 | Total Weight of Cubicles | By Vendor | After Detail Desig | A | Acc To Tech Offer | A | After Detail Desig | A | After Detail Desig | A |

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|  | <div>نگهداشت و افزایش تولید میدان نفتی بینک</div> <div>سطح الارض</div> <div>احداث ردیف تراکم گاز در ایستگاه جمع آوری بینک</div> | | | | | | | |  |
| شماره پیمان: ۰۵۳ - ۰۷۳ - ۹۱۸۴ | TBE FOR LV SWITCHGEAR, MCC & LV CAPACITOR BANK | | | | | | | | شماره صفحه : ۱۱ از ۱۸ |
| | نسخه | سریال | نوع مدرک | رشته | تهیهات | صادرکننده | بسته کاری | پروژه | |
| | D00 | 0002 | TB | EL | 120 | PEDCO | GCS | BK | |

| TBE for LV Switchgear | | | | | | | | | | |
|--------------------------|--|-----------------------|---------------------|--------|--------------|--------|--------------------|--------|-----------------------------|--------|
| MR | PMR For LV Switchgear, MCC & LV Capacitor Bank (BK-GCS-PEDCO-120-EL-MR-0002) | Purchaser Requirement | Ista Noavaran Niroo | Status | Pars Tableau | Status | Taban Tablo Shargh | Status | Runin Sanat | Status |
| Item | Description | | | | | | | | | |
| 13.11 | Time Schedule Prepared | By Vendor | Based on Offer | A | Confirmed | A | After P.O | A | After contract | A |
| 13.12 | Delivery Time | By Vendor | 120 Day | A | Confirmed | C | 3months | A | After contract | C |
| 13.13 | Any Deviations From Spec. | By Vendor | Based on Offer | C | Confirmed | C | As Attached | C | Refer To Technical Proposal | C |
| 14. Accessories | | | | | | | | | | |
| 14.1 | Illumination (Y/N) | Yes | Confirmed | A | Confirmed | A | Confirmed | A | Confirmed | A |
| 14.2 | Lifting Lugs (Y/N) | Yes | Confirmed | A | Confirmed | A | Confirmed | A | Confirmed | A |
| 14.3 | Space Heater With Thermostat (Y/N) | Yes | Confirmed | A | Confirmed | A | Confirmed | A | Confirmed | A |
| 14.4 | C.B. Position Indicator | Yes | Confirmed | A | Confirmed | A | Confirmed | A | Confirmed | A |
| 14.5 | Door Key (Y/N) | Yes | Confirmed | A | Confirmed | A | Confirmed | A | Confirmed | A |
| 14.6 | C.B. Charging / Retracting (Y/N) | Yes | Confirmed | A | Confirmed | A | Confirmed | A | Confirmed | A |
| 14.7 | Voltage and Current Test Block for Protection Relays (Y/N) | Yes | Confirmed | A | Confirmed | A | Confirmed | A | Confirmed | A |
| 14.8 | Lamp Test Facility (Y/N) | Yes | Confirmed | A | Confirmed | A | Confirmed | A | Based On SLD | C |
| 14.9 | Automatic Shutter (Y/N) | Yes | Confirmed | A | Confirmed | A | Confirmed | A | Confirmed | A |
| 14.10 | Floor Frame (Y/N) | Yes | Confirmed | A | Confirmed | A | Confirmed | A | Confirmed | A |
| 14.11 | C.B. Transfer Trolley (Y/N) | Yes | Confirmed | A | Confirmed | A | Confirmed | A | Confirmed | A |
| 14.12 | Name Plate & Front Tag & Rear Side Tag (Y/N) | Yes | Confirmed | A | Confirmed | A | Confirmed | A | Confirmed | A |
| 14.13 | Telescopic Rotary Handle for MCCB(Y/N) | Yes | Confirmed | A | Confirmed | A | Confirmed | A | Confirmed | A |
| 15. Mechanical Interlock | | | | | | | | | | |
| 15.1 | Door Shall Not Able To Open When C.B. Is Closed | Yes | Confirmed | A | Confirmed | A | Confirmed | A | Confirmed | A |
| 15.2 | Impossibility of C.B. Rack-In / Rack-Out When C. B. Is Closed | Yes | Confirmed | A | Confirmed | A | Confirmed | A | Confirmed | A |
| 15.3 | Padlock for C.B. | Yes | Confirmed | A | Confirmed | A | Confirmed | A | Confirmed | A |
| 15.4 | MCCB Open / Close From Closed Door Through Lockable Telescopic Rotary Handle | Yes | Confirmed | A | Confirmed | A | Confirmed | A | Confirmed | A |

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|  | <div>نگهداشت و افزایش تولید میدان نفتی بینک</div> <div>سطح الارض</div> <div>احداث ردیف تراکم گاز در ایستگاه جمع آوری بینک</div> | | | | | | | |  |
| شماره پیمان: ۰۵۳ - ۰۷۳ - ۹۱۸۴ | TBE FOR LV SWITCHGEAR, MCC & LV CAPACITOR BANK | | | | | | | | شماره صفحه : ۱۲ از ۱۸ |
| | نسخه | سریال | نوع مدرک | رشته | تهیهات | صادرکننده | بسته کاری | پروژه | |
| | D00 | 0002 | TB | EL | 120 | PEDCO | GCS | BK | |

| TBE for LV Switchgear | | | | | | | | | | |
|---------------------------------------|---|-----------------------|---------------------|--------|--------------|--------|--------------------|--------|-------------|--------|
| MR | PMR For LV Switchgear, MCC & LV Capacitor Bank (BK-GCS-PEDCO-120-EL-MR-0002) | Purchaser Requirement | Ista Noavaran Niroo | Status | Pars Tableau | Status | Taban Tablo Shargh | Status | Runin Sanat | Status |
| Item | Description | | | | | | | | | |
| 16. Panel Space Heater Technical Data | | | | | | | | | | |
| 16.1 | Voltage | 230 VAC | Confirmed | A | Confirmed | A | Confirmed | A | Confirmed | A |
| 16.2 | Power Consumption | By Vendor | 100 W | A | 80 W | A | 100W | A | 60 W | A |
| 17. Panel Light Technical Data | | | | | | | | | | |
| 17.1 | Type No. | By Vendor | LED | A | LED | A | LED | A | LED | A |
| 17.2 | Voltage | 230 VAC | Confirmed | A | Confirmed | A | Confirmed | A | Confirmed | A |
| 17.3 | Power Consumption | By Vendor | 8 W | A | 5 W | A | 8 W | A | 5 W | A |


Status Legends:
A=Acceptable
N=Not Acceptable
N/A=Not Applicable
INA=Information Not Available
C=Clarification is Required
CA= Conditionally Acceptable
M = Requirement is Mandatory

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|--|--|-------|----------|------|---------|-----------|-----------|--|
|  NISOC | <p>نگهداشت و افزایش تولید میدان نفتی بینک سطح الارض</p> <p>احداث ردیف تراکم گاز در ایستگاه جمع آوری بینک</p> | | | | | | |  HIRGAN ENERGY |
| شماره پیمان: ۰۵۳ - ۰۷۳ - ۹۱۸۴ | TBE FOR LV SWITCHGEAR, MCC & LV CAPACITOR BANK | | | | | | | شماره صفحه: ۱۳ از ۱۸ |
| | نسخه | سریال | نوع مدرک | رشته | تسهیلات | صادرکننده | بسته کاری | |
| | D00 | 0002 | TB | EL | 120 | PEDCO | GCS | |
| | پروژه | BK | | | | | | |

| | | TBE for LV Capacitor Bank | | | | | | | | | |
|---|---|---------------------------|---|--------------------------|--------|--------------|--------|--------------------|--------|--------------------------|--------|
| MR | PMR For LV Switchgear, MCC & LV Capacitor Bank (BK-GCS-PEDCO-120-EL-MR-0002) | | Purchaser Requirement | Ista Noavaran Niroo | Status | Pars Tableau | Status | Taban Tablo Shargh | Status | Runnin Sanat | Status |
| Item | Description | | | | | | | | | | |
| 1. General Information | | | | | | | | | | | |
| 1.1 | Quantity | | 1 Set for Each LV Switchgear (Note 2) | Confirmed | A | Confirmed | A | Confirmed | A | Confirmed | A |
| 1.2 | Tag Numbers | | CB01 & CB02 | Confirmed | A | Confirmed | A | Confirmed | A | Confirmed | A |
| 1.3 | Applicable Standards | | IEC 60831 IPS-M-EL-181(2) IPS-M-EL-143(3) | Confirmed | A | Confirmed | A | Confirmed | A | Confirmed | A |
| 1.4 | Applicable Document | | BK-GNRAL-PEDCO-000-EL-SP-0012 BK-GCS-PEDCO-120-EL-CN-0011 BK-GNRAL-PEDCO-000-EL-SP-0001 | Confirmed | A | Confirmed | A | Confirmed | A | Confirmed | A |
| 1.5 | Manufacturer's Name | | By Vendor | Ista Noavaran Niroo Co | A | Pars Tableau | A | Taban Tablo | A | Runnin Sanat | A |
| 2. Environmental Conditions (Process Basis Design, BK-GNRAL-PEDCO-000-PR-DB-0001) | | | | | | | | | | | |
| 2.1 | Location | | Binak Oilfield in Bushehr Province | Confirmed | A | Confirmed | A | Confirmed | A | Confirmed | A |
| 2.2 | Hazardous Area Classification | | Safe | Confirmed | A | Confirmed | A | Confirmed | A | Confirmed | A |
| 2.3 | Max. Outdoor Ambient Temperature | | 55°C | Design temperature: 40°C | C | Confirmed | A | Confirmed | A | Design temperature: 40°C | C |
| 2.4 | Minimum Indoor Ambient Temp. | | -5°C | Confirmed | A | Confirmed | A | Confirmed | A | Confirmed | A |
| 2.5 | Maximum Indoor Relative Humidity | | 100% | Confirmed | A | Confirmed | A | Confirmed | A | Confirmed | A |
| 2.6 | Altitude (Above Sea Level) | | 12.5 m | Confirmed | A | Confirmed | A | Confirmed | A | Confirmed | A |
| 2.7 | Seismic Factor | | Zone 3 | Confirmed | A | Confirmed | A | Confirmed | A | Confirmed | A |
| 2.8 | Installation | | Indoor | Confirmed | A | Confirmed | A | Confirmed | A | Confirmed | A |
| 3. Electrical Data | | | | | | | | | | | |
| 3.1 | System Voltage | | 400V AC ±10% | Confirmed | A | Confirmed | A | Confirmed | A | Confirmed | A |
| 3.2 | System Frequency | | 50 Hz ±5% | Confirmed | A | Confirmed | A | Confirmed | A | Confirmed | A |
| 3.3 | No. of Phases | | 3 | Confirmed | A | Confirmed | A | Confirmed | A | Confirmed | A |
| 3.4 | Control Voltage | | 230 VAC | Confirmed | A | Confirmed | A | Confirmed | A | Confirmed | A |
| 3.5 | Space Heater Voltage | | 230 VAC | Confirmed | A | Confirmed | A | Confirmed | A | Confirmed | A |

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|  | نگهداشت و افزایش تولید میدان نفتی بینک سطح الارض احداث ردیف تراکم گاز در ایستگاه جمع آوری بینک | | | | | | |  |
| شماره پیمان: ۰۵۳ - ۰۷۳ - ۹۱۸۴ | TBE FOR LV SWITCHGEAR, MCC & LV CAPACITOR BANK | | | | | | | شماره صفحه : ۱۴ از ۱۸ |
| | نسخه | سریال | نوع مدرک | رشته | تجهیزات | صادرکننده | بسته کاری | |
| | D00 | 0002 | TB | EL | 120 | PEDCO | GCS | |
| BK | | | | | | | | |

| TBE for LV Capacitor Bank | | | | | | | | | | |
|---------------------------|--|---|---------------------|--------|-----------------|--------|--|--------|-----------------|--------|
| MR | PMR For LV Switchgear, MCC & LV Capacitor Bank (BK-GCS-PEDCO-120-EL-MR-0002) | Purchaser Requirement | Ista Noavaran Niroo | Status | Pars Tableau | Status | Taban Tablo Shargh | Status | Runnin Sanat | Status |
| Item | Description | | | | | | | | | |
| 3.6 | Bus-Bar Rated Current | 315A | Confirmed | A | Confirmed | A | Confirmed | A | Confirmed | A |
| 3.7 | Short Time Withstand Current | 50 kA, 1 Sec. | Confirmed | A | Confirmed | A | Confirmed | A | Confirmed | A |
| 3.8 | Bus-Bars Material | Heat Shrink Copper | Confirmed | A | Confirmed | A | Confirmed | A | Confirmed | A |
| 3.9 | Bus-Bars Joints | Silver Plated | Confirmed | A | Confirmed | A | Tin plated (Main busbar, not only joint) | C | Confirmed | A |
| 4. Enclosure Data | | | | | | | | | | |
| 4.1 | Enclosure Type | Free Standing/Fixed Type / Front Access | Confirmed | A | Confirmed | A | Confirmed | A | Confirmed | A |
| 4.2 | Degree of Protection | IP 42 | Confirmed | A | Confirmed | A | Confirmed | A | Confirmed | A |
| 4.3 | Cable Entry | Bottom (by Cable Gland) | Confirmed | A | Confirmed | A | Confirmed | A | Confirmed | A |
| 4.4 | Type & Size of Power Cable | According to “BK-GCS-PEDCO-120-EL-CN-0003” (4C×120 mm2 CU/XLPE/SWA/PVC) | Confirmed | A | Confirmed | A | Confirmed | A | Confirmed | A |
| 4.5 | Control Cable | 2×(5C× 4 mm2) for Current & Voltage Sample | Confirmed | A | Confirmed | A | Confirmed | A | Confirmed | A |
| 4.6 | Material | Painted Sheet Steel | Confirmed | A | Confirmed | A | Confirmed | A | Confirmed | A |
| 4.7 | Color | RAL 7032 | Confirmed | A | Confirmed | A | Confirmed | A | Confirmed | A |
| 4.8 | Dimensions (HxWxD) | By Vendor | At detail stage | A | At detail stage | A | 2200*800*800 | A | At detail stage | A |
| 4.9 | Sheet Steel Thickness (Body/Frame) | 2mm/2.5mm | Confirmed | A | Confirmed | A | Confirmed | A | Confirmed | A |
| 4.10 | Weight | By Vendor | 300 ~ 350 Kg | A | 300 ~ 350 Kg | A | 300 ~ 350 Kg | A | 300 ~ 350 Kg | A |
| 5. Capacitors | | | | | | | | | | |
| 5.1 | Capacitor Manufacturer/Model No./Year | By Vendor | PKC | A | Hydra | C | FARAKOH/; IFASA/ SABAKHAZEN | A | Palayesh Nirou | A |
| 5.2 | Rating of each Capacitor Bank | 140Kvar = 1x20Kvar Fix + 6x20Kvar | Confirmed | A | Confirmed | A | Confirmed | A | Confirmed | A |
| 5.3 | Capacitor Bank Rated Current | By Vendor | At detail stage | A | At detail stage | A | At detail stage | A | At detail stage | A |
| 5.4 | Capacitor Bank Rated Voltage | 440V | Confirmed | A | Confirmed | A | Confirmed | A | Confirmed | A |

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|  | <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 | TBE FOR LV SWITCHGEAR, MCC & LV CAPACITOR BANK | | | | | | | شماره صفحه: ۱۵ از ۱۸ |
| | نسخه | سریال | نوع مدرک | رشته | تسهیلات | صادرکننده | بسته کاری | |
| | D00 | 0002 | TB | EL | 120 | PEDCO | GCS | |
| | پروژه | BK | | | | | | |

| TBE for LV Capacitor Bank | | | | | | | | | | |
|-----------------------------|--|--|---------------------|--------|--------------|--------|--------------------|--------|----------------|--------|
| MR | PMR For LV Switchgear, MCC & LV Capacitor Bank (BK-GCS-PEDCO-120-EL-MR-0002) | Purchaser Requirement | Ista Noavaran Niroo | Status | Pars Tableau | Status | Taban Tablo Shargh | Status | Runnin Sanat | Status |
| Item | Description | | | | | | | | | |
| 5.5 | Capacitor Bank Connection Type | Delta | Confirmed | A | Confirmed | A | Confirmed | A | Confirmed | A |
| 5.6 | Capacitor Unit Temp. Category | -5/D | Confirmed | A | Confirmed | A | Confirmed | A | Confirmed | A |
| 5.7 | Capacitor Unit Case Material | Aluminum | Confirmed | A | Confirmed | A | Confirmed | A | Confirmed | A |
| 5.8 | Capacitor Unit Discharge time (to 75V) | <3 Minutes | Confirmed | A | Confirmed | A | Confirmed | A | Confirmed | A |
| 6. Control Unit (Regulator) | | | | | | | | | | |
| 6.1 | Manufacturer / Type | By Vendor | PKC | A | PKC | A | Schneider | A | Palayesh Nirou | A |
| 6.2 | Mode of Operation | Automatic & Manual | Confirmed | A | Confirmed | A | Confirmed | A | Confirmed | A |
| 6.3 | Number of Steps | 5 Steps | Confirmed | A | Confirmed | A | Confirmed | A | Confirmed | A |
| 6.4 | Selector Switch | Auto/Off/Manual Selector Switch For Each Step | Confirmed | A | Confirmed | A | Confirmed | A | Confirmed | A |
| 7. Fuses | | | | | | | | | | |
| 7.1 | Manufacturer / Type | By Vendor | ETI | A | Pichaz | A | Pichaz | A | ETI | A |
| 7.2 | Rated Current | 1.5 times of Capacitor Rated Current | Confirmed | A | Confirmed | A | Confirmed | A | Confirmed | A |
| 7.3 | Inrush Current | 100 times of Capacitor Rated Current | Confirmed | A | Confirmed | A | Confirmed | A | Confirmed | A |
| 7.4 | Rated Voltage | 500V | Confirmed | A | Confirmed | A | Confirmed | A | Confirmed | A |
| 7.5 | Service Voltage | 400V±10% | Confirmed | A | Confirmed | A | Confirmed | A | Confirmed | A |
| 7.6 | Rated Frequency | 50Hz±5% | Confirmed | A | Confirmed | A | Confirmed | A | Confirmed | A |
| 8. Contactors | | | | | | | | | | |
| 8.1 | Manufacturer / Type | By Vendor | Siemens | A | Schneider | A | RK / LIFASA | A | schneider | A |
| 8.2 | Rated Voltage | 690V AC | Confirmed | A | Confirmed | A | Confirmed | A | Confirmed | A |
| 8.3 | Service Voltage | 400V AC | Confirmed | A | Confirmed | A | Confirmed | A | Confirmed | A |
| 8.4 | Coil Voltage | 230 VAC (Note 2) | Confirmed | A | Confirmed | A | Confirmed | A | Confirmed | A |
| 8.5 | Duty | AC6-b | Confirmed | A | Confirmed | A | Confirmed | A | Confirmed | A |

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|  | <div>نگهداشت و افزایش تولید میدان نفتی بینک سطح الارض</div> <div>احداث ردیف تراکم گاز در ایستگاه جمع آوری بینک</div> | | | | | | | |  |
| شماره پیمان: ۰۵۳ - ۰۷۳ - ۹۱۸۴ | TBE FOR LV SWITCHGEAR, MCC & LV CAPACITOR BANK | | | | | | | | شماره صفحه : ۱۶ از ۱۸ |
| | نسخه | سریال | نوع مدرک | رشته | تجهیزات | صادر کننده | بسته کاری | پروژه | |
| | D00 | 0002 | TB | EL | 120 | PEDCO | GCS | BK | |

| | | TBE for LV Capacitor Bank | | | | | | | | |
|------------------------------------|---|---------------------------|---------------------|--------|--------------|--------|---------------------------------|--------|--------------|--------|
| MR | PMR For LV Switchgear, MCC & LV Capacitor Bank (BK-GCS-PEDCO-120-EL-MR-0002) | Purchaser Requirement | Ista Noavaran Niroo | Status | Pars Tableau | Status | Taban Tablo Shargh | Status | Runnin Sanat | Status |
| Item | Description | | | | | | | | | |
| 9. Incoming Circuit Breaker | | | | | | | | | | |
| 9.1 | Manufacturer / Type | By Vendor | ABB / Siemens | A | Schneider | A | ABB | A | schneider | A |
| 9.2 | Type | MCCB, 4Pole, Fixed Type | Confirmed | A | Confirmed | A | Confirmed | A | 3 Pole | A |
| 9.3 | Rated Current | 315A | Confirmed | A | Confirmed | A | Confirmed | A | Confirmed | A |
| 9.4 | Rated Short Circuit Breaking Current | 50 kA | Confirmed | A | Confirmed | A | Confirmed | A | Confirmed | A |
| 9.5 | Rated Insulation Voltage | 1000 VAC | Confirmed | A | Confirmed | A | Confirmed | A | Confirmed | A |
| 9.6 | Service Voltage | 400V | Confirmed | A | Confirmed | A | Confirmed | A | Confirmed | A |
| 9.7 | Internal Protections | 49, 50, 51 | Confirmed | A | Confirmed | A | 49 & 50 | A | 49 & 50 | A |
| 9.8 | Voltage Protection | 230 VAC | Confirmed | A | Confirmed | A | Confirmed | A | Confirmed | A |
| 9.9 | Trip and Status aux. switches | Yes | Confirmed | A | Confirmed | A | Confirmed | A | Confirmed | A |
| 10. Voltmeter with Selector Switch | | | | | | | | | | |
| 10.1 | Manufacturer / Type | By Vendor | Ziegler | A | BEW | C | Voltmeter: BEW Selectoe: TRS | C | BEW | C |
| 10.2 | Operating Range | 0 -500V | Confirmed | A | Confirmed | A | Confirmed | A | Confirmed | A |
| 10.3 | Accuracy Class | 1.5 | Confirmed | A | Confirmed | A | Confirmed | A | Confirmed | A |
| 11. Accessories | | | | | | | | | | |
| 11.1 | Panel Lighting & Space Heater with Thermostat/Hygrostat | Yes | Confirmed | A | Confirmed | A | Confirmed | A | Confirmed | A |
| 11.2 | Door Key | Yes | Confirmed | A | Confirmed | A | Confirmed | A | Confirmed | A |
| 11.3 | Gland Plate | Yes | Confirmed | A | Confirmed | A | Confirmed | A | Confirmed | A |
| 11.4 | Terminal Lugs | Yes | Confirmed | A | Confirmed | A | Confirmed | A | Confirmed | A |
| 11.5 | Commissioning Spare Parts | Yes | Confirmed | A | Confirmed | A | Confirmed | A | Confirmed | A |
| 11.6 | Two Year Operation Spare Parts | Yes | Confirmed | A | Confirmed | A | Confirmed | A | Confirmed | A |
| 11.7 | Routine Test | Witnessed and Report | Confirmed | A | Confirmed | A | Confirmed | A | Confirmed | A |

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|  | <div>نگهداشت و افزایش تولید میدان نفتی بینک</div> <div>سطح الارض</div> <div>احداث ردیف تراکم گاز در ایستگاه جمع آوری بینک</div> | | | | | | | |  |
| شماره پیمان: ۰۵۳ - ۰۷۳ - ۹۱۸۴ | TBE FOR LV SWITCHGEAR, MCC & LV CAPACITOR BANK | | | | | | | | شماره صفحه : ۱۷ از ۱۸ |
| | نسخه | سریال | نوع مدرک | رشته | تهیهات | صادرکننده | بسته کاری | پروژه | |
| | D00 | 0002 | TB | EL | 120 | PEDCO | GCS | BK | |

| | | TBE for LV Capacitor Bank | | | | | | | | | |
|--------------------|---|---------------------------|-----------------------|----------------------|--------|-----------------|--------|--------------------|--------|-----------------|--------|
| MR | PMR For LV Switchgear, MCC & LV Capacitor Bank (BK-GCS-PEDCO-120-EL-MR-0002) | | Purchaser Requirement | Ista Noavaran Niroo | Status | Pars Tableau | Status | Taban Tablo Shargh | Status | Runnin Sanat | Status |
| Item | Description | | | | | | | | | | |
| 11.8 | Type Test CERTIFICATE | | Certificat | Confirmed | A | Confirmed | A | Confirmed | A | Confirmed | A |
| 12. Inrush Reactor | | | | | | | | | | | |
| 12.1 | Inrush Reactor Requied (Y/N) | | By Vendor | PKC / Zafar / Azmoon | A | PKC | C | Farakoh | A | PKC | A |
| 12.2 | Inductance (mH) | | By Vendor | At detail stage | A | At detail stage | C | At detail stage | A | At detail stage | A |
| 12.3 | Type | | By Vendor | At detail stage | A | At detail stage | C | At detail stage | A | At detail stage | A |

Status Legends:
A=Acceptable
N=Not Acceptable
N/A=Not Applicable
INA=Information Not Available
C=Clarification is Required
CA= Conditionally Acceptable
M = Requirement is Mandatory

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|---|--|-------|----------|------|--------|-----------|-----------|-------|---|
|  | <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 | TBE FOR LV SWITCHGEAR, MCC & LV CAPACITOR BANK | | | | | | | | شماره صفحه : ۱۸ از ۱۸ |
| | نسخه | سریال | نوع مدرک | رشته | تهیهات | صادرکننده | بسته کاری | پروژه | |
| | D00 | 0002 | TB | EL | 120 | PEDCO | GCS | BK | |

Conclusion Table:

| Item | Equipment | Ista Noavaran Niroo | Pars Tableau | Taban Tablo Shargh | Runin Sanat Gostar |
|------|-------------------|---------------------|--------------|--------------------|--------------------|
| 1 | LV MCC Switchgear | Acceptable | Acceptable | Acceptable | Acceptable |
| 2 | LV Capacitor Bank | Acceptable | Acceptable | Acceptable | Acceptable |

Conclusion Note:

- 1- The maximum design temperature of LV switchgear is 40 °C.
- 2- Protection relay is not acceptable on the C.B (Built-in type) , Protection relay shall be externally type.