

|                                                                                            |                                                                                                                  |           |            |         |      |          |       |      |                                                                                     |
|--------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------|-----------|------------|---------|------|----------|-------|------|-------------------------------------------------------------------------------------|
| <br>NISOC | <p>نگهداشت و افزایش تولید میدان نفتی بینک<br/>سطح الارض</p> <p>احداث ردیف تراکم گاز در ایستگاه جمع آوری بینک</p> |           |            |         |      |          |       |      |  |
| شماره پیمان:<br><br>۰۵۳ - ۰۷۳ - ۹۱۸۴                                                       | DATA SHEETS FOR UPS                                                                                              |           |            |         |      |          |       |      | شماره صفحه ۱ از ۹                                                                   |
|                                                                                            | پروژه                                                                                                            | بسته کاری | صادر کننده | تسهیلات | رشته | نوع مدرک | سریال | نسخه |                                                                                     |
|                                                                                            | BK                                                                                                               | GCS       | PEDCO      | 120     | EL   | DT       | 0001  | D05  |                                                                                     |

## طرح نگهداشت و افزایش تولید ۲۷ مخزن

### DATA SHEETS FOR UPS

#### نگهداشت و افزایش تولید میدان نفتی بینک

| D05  | Oct.2024 | AFC                     | H.Shakiba    | M.Fakharian | M.Sadeghian    |                 |
|------|----------|-------------------------|--------------|-------------|----------------|-----------------|
| D04  | Jan.2024 | AFC                     | H.Shakiba    | M.Fakharian | S.Faramarzpour |                 |
| D03  | May.2023 | AFC                     | H.Shakiba    | M.Fakharian | A.M.Mohseni    |                 |
| D02  | Jul.2022 | IFA                     | H.Shakiba    | M.Fakharian | M.Mehrshad     |                 |
| D01  | Apr.2022 | IFA                     | H.Shakiba    | M.Fakharian | M.Mehrshad     |                 |
| D00  | Dec.2021 | IFC                     | H.Shakiba    | M.Fakharian | M.Mehrshad     |                 |
| Rev. | Date     | Purpose of Issue/Status | Prepared by: | Checked by: | Approved by:   | Client Approval |

Class: 1

Client Doc. Number: F0Z-709018

#### 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

|                                                                                            |                                                                                                                     |           |            |         |      |          |       |                                                                                     |
|--------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------|-----------|------------|---------|------|----------|-------|-------------------------------------------------------------------------------------|
| <br>NISOC | <p>نگهداشت و افزایش تولید میدان نفتی بینک</p> <p>سطح الارض</p> <p>احداث ردیف تراکم گاز در ایستگاه جمع آوری بینک</p> |           |            |         |      |          |       |  |
| شماره پیمان:<br><br>۰۵۳ - ۰۷۳ - ۹۱۸۴                                                       | DATA SHEETS FOR UPS                                                                                                 |           |            |         |      |          |       | شماره صفحه: ۲ از ۹                                                                  |
|                                                                                            | پروژه                                                                                                               | بسته کاری | صادر کننده | تسهیلات | رشته | نوع مدرک | سریال |                                                                                     |
|                                                                                            | BK                                                                                                                  | GCS       | PEDCO      | 120     | EL   | DT       | 0001  | D05                                                                                 |

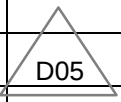
### REVISION RECORD SHEET

| PAGE | D01 | D02 | D03 | D04 | D05 |
|------|-----|-----|-----|-----|-----|
| 1    | X   | X   | X   | X   | X   |
| 2    | X   | X   | X   | X   | X   |
| 3    | X   | X   | X   | X   | X   |
| 4    | X   |     | X   | X   | X   |
| 5    | X   | X   | X   | X   | X   |
| 6    | X   |     | X   | X   | X   |
| 7    | X   |     |     |     |     |
| 8    | X   |     |     |     |     |
| 9    | X   |     |     |     |     |
| 10   | X   |     |     |     |     |
| 11   |     |     |     |     |     |
| 12   |     |     |     |     |     |
| 13   |     |     |     |     |     |
| 14   |     |     |     |     |     |
| 15   |     |     |     |     |     |
| 16   |     |     |     |     |     |
| 17   |     |     |     |     |     |
| 18   |     |     |     |     |     |
| 19   |     |     |     |     |     |
| 20   |     |     |     |     |     |
| 21   |     |     |     |     |     |
| 22   |     |     |     |     |     |
| 23   |     |     |     |     |     |
| 24   |     |     |     |     |     |
| 25   |     |     |     |     |     |
| 26   |     |     |     |     |     |
| 27   |     |     |     |     |     |
| 28   |     |     |     |     |     |
| 29   |     |     |     |     |     |
| 30   |     |     |     |     |     |
| 31   |     |     |     |     |     |
| 32   |     |     |     |     |     |
| 33   |     |     |     |     |     |
| 34   |     |     |     |     |     |
| 35   |     |     |     |     |     |
| 36   |     |     |     |     |     |
| 37   |     |     |     |     |     |
| 38   |     |     |     |     |     |
| 39   |     |     |     |     |     |
| 40   |     |     |     |     |     |
| 41   |     |     |     |     |     |
| 42   |     |     |     |     |     |
| 43   |     |     |     |     |     |
| 44   |     |     |     |     |     |
| 45   |     |     |     |     |     |
| 46   |     |     |     |     |     |
| 47   |     |     |     |     |     |
| 48   |     |     |     |     |     |
| 49   |     |     |     |     |     |
| 50   |     |     |     |     |     |

| PAGE | D01 | D02 | D03 | D04 | D05 |
|------|-----|-----|-----|-----|-----|
| 51   |     |     |     |     |     |
| 52   |     |     |     |     |     |
| 53   |     |     |     |     |     |
| 54   |     |     |     |     |     |
| 55   |     |     |     |     |     |
| 56   |     |     |     |     |     |
| 57   |     |     |     |     |     |
| 58   |     |     |     |     |     |
| 59   |     |     |     |     |     |
| 60   |     |     |     |     |     |
| 61   |     |     |     |     |     |
| 62   |     |     |     |     |     |
| 63   |     |     |     |     |     |
| 64   |     |     |     |     |     |
| 65   |     |     |     |     |     |
| 66   |     |     |     |     |     |
| 67   |     |     |     |     |     |
| 68   |     |     |     |     |     |
| 69   |     |     |     |     |     |
| 70   |     |     |     |     |     |
| 71   |     |     |     |     |     |
| 72   |     |     |     |     |     |
| 73   |     |     |     |     |     |
| 74   |     |     |     |     |     |
| 75   |     |     |     |     |     |
| 76   |     |     |     |     |     |
| 77   |     |     |     |     |     |
| 78   |     |     |     |     |     |
| 79   |     |     |     |     |     |
| 80   |     |     |     |     |     |
| 81   |     |     |     |     |     |
| 82   |     |     |     |     |     |
| 83   |     |     |     |     |     |
| 84   |     |     |     |     |     |
| 85   |     |     |     |     |     |
| 86   |     |     |     |     |     |
| 87   |     |     |     |     |     |
| 88   |     |     |     |     |     |
| 89   |     |     |     |     |     |
| 90   |     |     |     |     |     |
| 91   |     |     |     |     |     |
| 92   |     |     |     |     |     |
| 93   |     |     |     |     |     |
| 94   |     |     |     |     |     |
| 95   |     |     |     |     |     |
| 96   |     |     |     |     |     |
| 97   |     |     |     |     |     |
| 98   |     |     |     |     |     |
| 99   |     |     |     |     |     |
| 100  |     |     |     |     |     |

|                                                                                            |                                                                                                                  |           |           |         |      |          |       |                                                                                     |      |
|--------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------|-----------|-----------|---------|------|----------|-------|-------------------------------------------------------------------------------------|------|
| <br>NISOC | <p>نگهداشت و افزایش تولید میدان نفتی بینک<br/>سطح الارض</p> <p>احداث ردیف تراکم گاز در ایستگاه جمع آوری بینک</p> |           |           |         |      |          |       |  |      |
| شماره پیمان:<br><br>۰۵۳ - ۰۷۳ - ۹۱۸۴                                                       | DATA SHEETS FOR UPS                                                                                              |           |           |         |      |          |       | شماره صفحه : ۳ از ۹                                                                 |      |
|                                                                                            | پروژه                                                                                                            | بسته کاری | صادرکننده | تسهیلات | رشته | نوع مدرک | سریال |                                                                                     | نسخه |
|                                                                                            | BK                                                                                                               | GCS       | PEDCO     | 120     | EL   | DT       | 0001  | D05                                                                                 |      |

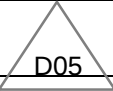
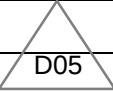
| TECHNICAL DATA FOR AC-UPS IN GCS                                                                                                                                                                                                                                                                                                                                               |                               |                                    |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------|------------------------------------|
| Vendor's Name:                                                                                                                                                                                                                                                                                                                                                                 | Location                      | Binak Oilfield in Bushehr Province |
| Tag No.(s): GCS-110-UPS-001, GCS-110-UPS-002                                                                                                                                                                                                                                                                                                                                   | Min. Design Temperature       | -5°C                               |
| App. Document(s):                                                                                                                                                                                                                                                                                                                                                              | Max. Design Temperature       | +52°C                              |
| Reference Documents:<br>01- " Electrical System Design Criteria ",<br>Doc. No.: " BK-GNRAL-PEDCO-000-EL-DC-0001 "<br>02- "Specification for UPS System",<br>Doc. No.: " BK-GNRAL-PEDCO-000-EL-SP-0003 "<br>03- " Calculation Note For UPS System<br>Doc. No.: " BK-GCS-PEDCO-120-EL-CN-0004 "<br>04- " UPS Single Line Diagram ",<br>Doc. No.: " BK-GCS-PEDCO-120-EL-SL-0005 " | Max. Sun Temperature          | +85°C                              |
|                                                                                                                                                                                                                                                                                                                                                                                | Max. Relative Humidity        | 85%                                |
|                                                                                                                                                                                                                                                                                                                                                                                | Mean Sea Level                | 12.5 m Above Sea Level             |
|                                                                                                                                                                                                                                                                                                                                                                                | Seismic Acceleration          | 0.3g                               |
|                                                                                                                                                                                                                                                                                                                                                                                | Hazardous Area classification | Safe Area                          |
|                                                                                                                                                                                                                                                                                                                                                                                | Atmosphere                    | Tropical & Dusty Hot Atmosphere    |

| Item                      | Description                                                                                                  | Required                                              | Vendor Data                                                                           |
|---------------------------|--------------------------------------------------------------------------------------------------------------|-------------------------------------------------------|---------------------------------------------------------------------------------------|
| GENERAL                   |                                                                                                              |                                                       |                                                                                       |
| 1                         | Applicable Code & Standard                                                                                   | IEC 62040,IPS-M-EL-176(2),IPS-E-EL-100(1)             |                                                                                       |
| 2                         | Electromagnetic Compatibility                                                                                | As per IEC 62040-2                                    |                                                                                       |
| 3                         | Service                                                                                                      | 110 VAC UPS Control Room requirements                 |                                                                                       |
| 4                         | Installation                                                                                                 | Indoor                                                |                                                                                       |
| 5                         | Rated Input (Note 2)                                                                                         | 380/400/440VAC±10%, 3 phases, 3 wires ,<br>f=50Hz ±5% |                                                                                       |
| 6                         | Rated Output                                                                                                 | 110 VAC ± 1%                                          |                                                                                       |
| 7                         | Rated Power                                                                                                  | 43.41 Kw                                              |  |
| 8                         | Country of Origin                                                                                            | By Vendor                                             |                                                                                       |
| 9                         | Cold Start Facility                                                                                          | Required                                              |                                                                                       |
| 10                        | No. of UPS                                                                                                   | Double (Note 1)                                       |                                                                                       |
| MECHANICAL CHARACTERISTIC |                                                                                                              |                                                       |                                                                                       |
| 11                        | Noise Level (in accordance with ISO7779)<br>The Sound Pressure Level Measured at 1m<br>Distance From the UPS | 60dBA                                                 |                                                                                       |
| 12                        | Permissive Max. Temp. Rise                                                                                   | By Vendor                                             |                                                                                       |
| 13                        | Enclosure Construction                                                                                       | Sheet Steel with min. Thickness 2mm                   |                                                                                       |
| 14                        | Degree of Protection ( IEC 60529)                                                                            | IP42                                                  |                                                                                       |

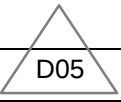
|                                                                                   |                                                                                                                  |           |           |         |      |          |       |                                                                                     |      |
|-----------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------|-----------|-----------|---------|------|----------|-------|-------------------------------------------------------------------------------------|------|
|  | <p>نگهداشت و افزایش تولید میدان نفتی بینک<br/>سطح الارض</p> <p>احداث ردیف تراکم گاز در ایستگاه جمع آوری بینک</p> |           |           |         |      |          |       |  |      |
| شماره پیمان:<br><br>۰۵۳ - ۰۷۳ - ۹۱۸۴                                              | DATA SHEETS FOR UPS                                                                                              |           |           |         |      |          |       | شماره صفحه: ۴ از ۹                                                                  |      |
|                                                                                   | پروژه                                                                                                            | بسته کاری | صادرکننده | تسهیلات | رشته | نوع مدرک | سریال |                                                                                     | نسخه |
|                                                                                   | BK                                                                                                               | GCS       | PEDCO     | 120     | EL   | DT       | 0001  | D05                                                                                 |      |

| Item                 | Description                     | Required                                      | Vendor Data |
|----------------------|---------------------------------|-----------------------------------------------|-------------|
| 15                   | Type of Cooling                 | Natural                                       |             |
| 16                   | Dimension                       | By Vendor                                     |             |
| 17                   | Weight                          | By Vendor                                     |             |
| 18                   | Panel mounting                  | Floor Mounted                                 |             |
| 19                   | Access                          | Front Access                                  |             |
| 20                   | MTBF (at 20°C (68°F))           | ≥140,000Hr                                    |             |
| 21                   | MTTR                            | ≤ 2Hr                                         |             |
| 22                   | Finish Color                    | RAL 7032                                      |             |
| LOAD CHARACTERISTICS |                                 |                                               |             |
| 23                   | Load Consumption                | 23.3 KVA                                      | D05         |
| 24                   | Load Description                | Instrument, PLC, DCS, Work Stations, Printers |             |
| 25                   | Rated Current                   | By Vendor                                     |             |
| 26                   | Power Factor Range              | 0.8-1 lag                                     |             |
| 27                   | Grounding System                | IT                                            |             |
| AC INPUT             |                                 |                                               |             |
| 28                   | Voltage & Variation             | 400 V ±10%, 3 phase 4 wire (Note 2)           |             |
| 29                   | Frequency & Variation           | 50Hz ± 5%                                     |             |
| 30                   | Grounding System                | IT                                            |             |
| 31                   | Short Circuit Current on System | 16 kA, 1Sec                                   |             |
| 32                   | Short Circuit Capability        | By Vendor                                     |             |
| 33                   | Rated Input Current             | By Vendor                                     |             |
| 34                   | THDi for Input Current          | < 5%                                          |             |
| 35                   | Input Power Factor (La g)       | > 0.85                                        |             |
| CHARGER              |                                 |                                               |             |
| 36                   | Rated Current (A)               | By Vendor                                     |             |
| 37                   | Rated Input Voltage             | 400 V + 15%, - 20%, 3 phase 4 wire            |             |
| 38                   | Rated Output Voltage            | 110 V AC Shall be finalized by Vendor         |             |
| 39                   | No. Of Charger                  | 2 Set (100%)                                  |             |

|                                                                                   |                                                                                                                  |           |           |         |      |          |       |                                                                                     |      |
|-----------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------|-----------|-----------|---------|------|----------|-------|-------------------------------------------------------------------------------------|------|
|  | <p>نگهداشت و افزایش تولید میدان نفتی بینک<br/>سطح الارض</p> <p>احداث ردیف تراکم گاز در ایستگاه جمع آوری بینک</p> |           |           |         |      |          |       |  |      |
| شماره پیمان:<br><br>۰۵۳ - ۰۷۳ - ۹۱۸۴                                              | DATA SHEETS FOR UPS                                                                                              |           |           |         |      |          |       | شماره صفحه : ۵ از ۹                                                                 |      |
|                                                                                   | پروژه                                                                                                            | بسته کاری | صادرکننده | تسهیلات | رشته | نوع مدرک | سریال |                                                                                     | نسخه |
|                                                                                   | BK                                                                                                               | GCS       | PEDCO     | 120     | EL   | DT       | 0001  | D05                                                                                 |      |

| Item     | Description                            | Required                                                                                | Vendor Data                                                                           |
|----------|----------------------------------------|-----------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------|
| 40       | Type of Rectifier                      | Constant Voltage Current Limiting Static Type Thyristor-Controlled Rectifier (12pulses) |                                                                                       |
| 41       | Voltage Ripple (rms)                   | $\pm 1\%$ of Nominal Voltage                                                            |                                                                                       |
| 42       | Voltage Regulation                     | $\pm 1\%$                                                                               |                                                                                       |
| 43       | Voltage Drop (Charger Load)            | By Vendor                                                                               |                                                                                       |
| 44       | Voltage Drop (Battery Charger)         | By Vendor                                                                               |                                                                                       |
| 45       | Allowable Voltage Range                | By Vendor                                                                               |                                                                                       |
| 46       | Normal Float Charge Voltage            | By Vendor                                                                               |                                                                                       |
| 47       | Max Boost Charge Voltage               | By Vendor                                                                               |                                                                                       |
| 48       | Efficiency                             | $\geq 90\%$                                                                             |                                                                                       |
| 49       | Maximum Heat Dissipation               | By Vendor                                                                               |                                                                                       |
| BATTERY  |                                        |                                                                                         |                                                                                       |
| 50       | Type of Batteries (IEC60623)           | Nickel-Cadmium (SBM type)                                                               |                                                                                       |
| 51       | Capacity of battery bank (Ah)          | 723 AH<br>(Shall be finalized by Vendor)                                                |  |
| 52       | Backup Time                            | 2hr                                                                                     |                                                                                       |
| 53       | Country of Origin/Company              | Europe/SAFT or ALCAD                                                                    |                                                                                       |
| 54       | Date of Manufacture                    | By Vendor                                                                               |                                                                                       |
| 55       | Battery Internal Resistance            | By Vendor                                                                               |                                                                                       |
| 56       | No's Of Battery Cells For Each Bank    | 92 (Shall be finalized by Vendor)                                                       |                                                                                       |
| 57       | Battery House                          | Rack                                                                                    |                                                                                       |
| 58       | Type of Battery Rack/Cabinet           | Wooden or Plastic /Epoxy Coated Steel<br>Anti-Seismic                                   |                                                                                       |
| 59       | No's. Of Battery Bank (100%)           | 2 Set                                                                                   |                                                                                       |
| 60       | Re-charging time to 90% Rated Capacity | 8 Hours                                                                                 |                                                                                       |
| 61       | Battery Nominal Voltage Per Cell       | 1.2V                                                                                    |                                                                                       |
| 62       | Battery Final Voltage Per Cell         | 1.136 V/cell                                                                            |                                                                                       |
| INVERTER |                                        |                                                                                         |                                                                                       |
| 63       | Power Rating                           | 23.3 kVA (Will be Finalized by Vendor)                                                  |  |
| 64       | Output Voltage                         | 110VAC                                                                                  |                                                                                       |

|                                                                                            |                                                                                                                  |           |           |         |      |          |       |                                                                                     |      |
|--------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------|-----------|-----------|---------|------|----------|-------|-------------------------------------------------------------------------------------|------|
| <br>NISOC | <p>نگهداشت و افزایش تولید میدان نفتی بینک<br/>سطح الارض</p> <p>احداث ردیف تراکم گاز در ایستگاه جمع آوری بینک</p> |           |           |         |      |          |       |  |      |
| شماره پیمان:<br><br>۰۵۳ - ۰۷۳ - ۹۱۸۴                                                       | DATA SHEETS FOR UPS                                                                                              |           |           |         |      |          |       | شماره صفحه : ۶ از ۹                                                                 |      |
|                                                                                            | پروژه                                                                                                            | بسته کاری | صادرکننده | تسهیلات | رشته | نوع مدرک | سریال |                                                                                     | نسخه |
|                                                                                            | BK                                                                                                               | GCS       | PEDCO     | 120     | EL   | DT       | 0001  | D05                                                                                 |      |

| Item                                | Description                                           | Required                                                                   | Vendor Data                                                                           |
|-------------------------------------|-------------------------------------------------------|----------------------------------------------------------------------------|---------------------------------------------------------------------------------------|
| 65                                  | Output Voltage Regulation                             | $\pm 1\%$ in Steady State                                                  |                                                                                       |
| 66                                  | Output Voltage Unbalance (At 100% Unbalanced Load)    | $< 1\%$                                                                    |                                                                                       |
| 67                                  | Output Frequency & Variation                          | 50Hz $\pm 1\%$                                                             |                                                                                       |
| 68                                  | Output Frequency Regulation                           | $\pm 1\%$ in steady state                                                  |                                                                                       |
| 69                                  | Maximum V <sub>Out</sub> Harmonic Distortions (THD %) | Max. 5% (for Linear & Nonlinear Loads)                                     |                                                                                       |
| 70                                  | Rated Output Current (Amp)                            | By Vendor                                                                  |                                                                                       |
| 71                                  | No. of Inverter (100%)                                | 2 Set                                                                      |                                                                                       |
| 72                                  | Type Of Inverter                                      | True Online Double Conversion Technology<br>pure Sine Wave IGBT Technology |                                                                                       |
| 73                                  | Transformer Base Technology                           | Required                                                                   |                                                                                       |
| 74                                  | Fast Fuse Protection For IGBT Bridge                  | Required                                                                   |                                                                                       |
| 75                                  | Max .Allowable Current                                | By Vendor                                                                  |                                                                                       |
| 76                                  | Efficiency (Min)                                      | $> 90\%$                                                                   |                                                                                       |
| 77                                  | Maximum Heat Dissipation                              | By Vendor                                                                  |                                                                                       |
| 78                                  | Type of Frequency Synchronizer                        | By Vendor                                                                  |                                                                                       |
| 79                                  | High Crest Factor                                     | Min 3:1                                                                    |                                                                                       |
| <b>BYPASS ISOLATING TRANSFORMER</b> |                                                       |                                                                            |                                                                                       |
| 80                                  | Type of Transformer                                   | Double Wound Dry Type Air Cooled                                           |                                                                                       |
| 81                                  | Input / Output Voltage                                | Input: 400 V<br>Output: 110 V ac, 50 Hz                                    |  |
| 82                                  | Bypass Transformer KVA Rating                         | 23.3 kVA                                                                   |                                                                                       |
| 83                                  | Short Circuit Impedance                               | Less than 4%                                                               |                                                                                       |
| 84                                  | Stabilizer (Servo Control With Galvanic Isolation)    | Required                                                                   |                                                                                       |
| 85                                  | Stabilizer Short Circuit Capacity                     | At Least 1000% for 100ms                                                   |                                                                                       |
| 86                                  | Stabilizer Static Output Voltage Tolerance            | Less than + 2% with V Mains +15%                                           |                                                                                       |
| 87                                  | Stabilizer Short Circuit Impedance                    | Less Than 6%                                                               |                                                                                       |
| 88                                  | Stabilizer Phase Shift From Input to Output           | Zero                                                                       |                                                                                       |
| <b>INVERTER/MAINS STATIC SWITCH</b> |                                                       |                                                                            |                                                                                       |
| 89                                  | Inverter Static Switch Type                           | Thyristor (S.R.V)                                                          |                                                                                       |

|                                                                                            |                                                                                                                  |           |           |         |      |          |       |                                                                                     |      |
|--------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------|-----------|-----------|---------|------|----------|-------|-------------------------------------------------------------------------------------|------|
| <br>NISOC | <p>نگهداشت و افزایش تولید میدان نفتی بینک<br/>سطح الارض</p> <p>احداث ردیف تراکم گاز در ایستگاه جمع آوری بینک</p> |           |           |         |      |          |       |  |      |
| شماره پیمان:<br><br>۰۵۳ - ۰۷۳ - ۹۱۸۴                                                       | DATA SHEETS FOR UPS                                                                                              |           |           |         |      |          |       | شماره صفحه : ۷ از ۹                                                                 |      |
|                                                                                            | پروژه                                                                                                            | بسته کاری | صادرکننده | تسهیلات | رشته | نوع مدرک | سریال |                                                                                     | نسخه |
|                                                                                            | BK                                                                                                               | GCS       | PEDCO     | 120     | EL   | DT       | 0001  | D05                                                                                 |      |

| Item                                | Description                                                      | Required                                                                                               | Vendor Data |
|-------------------------------------|------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------|-------------|
| 90                                  | Inverter Static Switch Rated Current (Continuous)                | $\geq 105\%$ of Rated Output Current of UPS                                                            |             |
| 91                                  | Inverter Over Load Capability on Static Switch                   | $>200\%$ For 100ms<br>$>150\%$ For 1Min<br>$>125\%$ For 10Min                                          |             |
| 92                                  | Transfer the Inverter Output Voltage                             | Below 90% of the Nominal Output Voltage<br>Exceeds 110% of the Nominal Output Voltage                  |             |
| 93                                  | Re-transfer of the Load From the Static Bypass to the Inverter   | The inverter output voltage is within $\pm 5\%$ of the nominal output voltage for more than 3 seconds. |             |
| 94                                  | Inverter/Mains Switching Transfer Time                           | 1/5 Period Of a Cycle                                                                                  |             |
| 95                                  | Mains Static Switch Type                                         | Thyristor (S.C.R)                                                                                      |             |
| 96                                  | Mains Static Switch Rated Current (Continuous)                   | 200% of Rated Output Current of UPS                                                                    |             |
| 97                                  | Mains Over Load Capability on Static Switch                      | $>200\%$ For 100ms<br>$>150\%$ For 1Min<br>$>125\%$ For 10Min                                          |             |
| 98                                  | Requirements for EMC ( IEC 62040-2)                              | Required                                                                                               |             |
| 99                                  | An earth bar, with a suitable number of earthing bolts or screws | Required                                                                                               |             |
| <b>MANUAL BYPASS SWITCH</b>         |                                                                  |                                                                                                        |             |
| 100                                 | Rated Current                                                    | 110% Rated Output Current of UPS System                                                                |             |
| 101                                 | Maintenance Bypass (Make Before Beak)                            | Required                                                                                               |             |
| 102                                 | Over Load Capability                                             | $> 1000\%$ For 100ms                                                                                   |             |
| 103                                 | Allowable Over Current (1 Sec)                                   | By Vendor                                                                                              |             |
| <b>AC DISTRIBUTION BOARD</b>        |                                                                  |                                                                                                        |             |
| 104                                 | Protection Degree                                                | IP42                                                                                                   |             |
| 105                                 | Feeder Quantity                                                  | According to "BK-GCS-PEDCO-120-EL-SL-0005"                                                             |             |
| 106                                 | Incoming Type (IEC 60947)                                        | MCCB, (Shall be finalized by vendor)                                                                   |             |
| <b>ACCESSORIES &amp; PROTECTION</b> |                                                                  |                                                                                                        |             |
| 107                                 | Incoming Cable                                                   | According to "BK-GCS-PEDCO-120-EL-CN-0003"                                                             |             |
| 108                                 | Cable Type                                                       | CU/XLPE/SWA/PVC                                                                                        |             |
| 109                                 | Earth Bar                                                        | Required                                                                                               |             |
| 110                                 | Cable Entry and Accessories                                      | Required                                                                                               |             |

|                                                                                   |                                                                                                                  |           |           |         |      |          |       |                                                                                     |
|-----------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------|-----------|-----------|---------|------|----------|-------|-------------------------------------------------------------------------------------|
|  | <p>نگهداشت و افزایش تولید میدان نفتی بینک<br/>سطح الارض</p> <p>احداث ردیف تراکم گاز در ایستگاه جمع آوری بینک</p> |           |           |         |      |          |       |  |
| شماره پیمان:<br><br>۰۵۳ - ۰۷۳ - ۹۱۸۴                                              | DATA SHEETS FOR UPS                                                                                              |           |           |         |      |          |       | شماره صفحه ۸ : از ۹                                                                 |
|                                                                                   | پروژه                                                                                                            | بسته کاری | صادرکننده | تسهیلات | رشته | نوع مدرک | سریال |                                                                                     |
|                                                                                   | BK                                                                                                               | GCS       | PEDCO     | 120     | EL   | DT       | 0001  | D05                                                                                 |

| Item                                               | Description                             | Required                                                   | Vendor Data |
|----------------------------------------------------|-----------------------------------------|------------------------------------------------------------|-------------|
| 111                                                | Current Limiting Device Setting         | Required                                                   |             |
| ALARMS                                             |                                         |                                                            |             |
| 112                                                | AC input supply failure                 | Required                                                   |             |
| 113                                                | Rectifier failure                       | Required                                                   |             |
| 114                                                | DC voltage low/high                     | Required                                                   |             |
| 115                                                | DC earth fault                          | Required                                                   |             |
| 116                                                | Battery discharging                     | Required                                                   |             |
| 117                                                | Battery disconnected                    | Required                                                   |             |
| 118                                                | Inverter failure                        | Required                                                   |             |
| 119                                                | Inverter over loaded                    | Required                                                   |             |
| 120                                                | Inverter over temperature               | Required                                                   |             |
| 121                                                | AC output voltage low/high              | Required                                                   |             |
| 122                                                | Output frequency low/high               | Required                                                   |             |
| 123                                                | Ventilation failure & high temp         | Required                                                   |             |
| METERING DEVICE                                    |                                         |                                                            |             |
| 124                                                | DC/AC Ammeter                           | Required                                                   |             |
| 125                                                | DC/AC Voltmeter                         | Required                                                   |             |
| 126                                                | Bypass/inverter/Load Frequency Meter    | Required                                                   |             |
| 127                                                | Remote Signals                          | Required                                                   |             |
| 128                                                | Serial Communication Capability         | RS 485                                                     |             |
| 129                                                | Fixing Bolt & nuts                      | Required                                                   |             |
| 130                                                | Lifting lug                             | Required                                                   |             |
| 131                                                | On load break switch-fuse For Batteries | Required<br>(For UPS DC Bus and Exd Type for Battery room) |             |
| TESTS (FAT & SAT SHALL BE PERFORMED BY THE VENDOR) |                                         |                                                            |             |
| 132                                                | Visual Inspection & Dimensional Check   | Required                                                   |             |
| 133                                                | Performance and Function Test           | Required                                                   |             |
| 134                                                | Sequence, Operation and Logic Test      | Required                                                   |             |
| 135                                                | Dielectric Strength Test                | Required                                                   |             |

|                                                                                            |                                                                                                                  |           |           |         |      |          |       |                                                                                     |      |
|--------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------|-----------|-----------|---------|------|----------|-------|-------------------------------------------------------------------------------------|------|
| <br>NISOC | <p>نگهداشت و افزایش تولید میدان نفتی بینک<br/>سطح الارض</p> <p>احداث ردیف تراکم گاز در ایستگاه جمع آوری بینک</p> |           |           |         |      |          |       |  |      |
| شماره پیمان:<br><br>۰۵۳ - ۰۷۳ - ۹۱۸۴                                                       | DATA SHEETS FOR UPS                                                                                              |           |           |         |      |          |       | شماره صفحه : ۹ از ۹                                                                 |      |
|                                                                                            | پروژه                                                                                                            | بسته کاری | صادرکننده | تسهیلات | رشته | نوع مدرک | سریال |                                                                                     | نسخه |
|                                                                                            | BK                                                                                                               | GCS       | PEDCO     | 120     | EL   | DT       | 0001  |                                                                                     | D05  |

| Item                                                                                                                                          | Description                                                                   | Required | Vendor Data |
|-----------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------|----------|-------------|
| 136                                                                                                                                           | Output Voltage Wave Form and THD% Check                                       | Required |             |
| 137                                                                                                                                           | Charger Voltage Adjustment Test                                               | Required |             |
| 138                                                                                                                                           | Transfer Time Test                                                            | Required |             |
| 139                                                                                                                                           | Output Regulation / Adjustments Test                                          | Required |             |
| 140                                                                                                                                           | Alarms Check                                                                  | Required |             |
| 141                                                                                                                                           | Autonomy Test                                                                 | Required |             |
| 142                                                                                                                                           | Overload /Short Circuit Test                                                  | Required |             |
| 143                                                                                                                                           | Short Circuit test                                                            | Required |             |
| Notes:<br>- Other Tests shall be performed in Accordance with IEC60146 & IEC62040-3<br>- The Accuracy of all meters shall be better than 1.5% |                                                                               |          |             |
| ACCESSORIES & SPECIAL TOOLS                                                                                                                   |                                                                               |          |             |
| 144                                                                                                                                           | MIMIC Diagram With LED To Show Operation Condition                            | Required |             |
| 145                                                                                                                                           | Hardware and Software for Communication Programming or Setting the CPU or MPU | Required |             |
| 146                                                                                                                                           | Automatic battery test and failure alarm                                      | Required |             |
| 147                                                                                                                                           | Hot and Cold standby unlimited systems                                        | Required |             |
| 148                                                                                                                                           | IGBT technology                                                               | Required |             |
| 149                                                                                                                                           | Low noise and heat rejection                                                  | Required |             |
| 150                                                                                                                                           | Commissioning and two years spare parts                                       | Required |             |

#### Notes:

- AC UPS should be of dual parallel active load share type, including 2x 100% charger, 2x 100% Inverter, 1x 100% bypass transformer-stabilizer (servo control with galvanic isolation), two Exd IIC T3 switch-fuse for batteries, 2x 100% battery bank (92 Cell), commissioning and two years spare parts.
- UPS shall be compatible with 380/400/440V AC options of input voltage.
- The UPS shall be provided with a standard RS485 connection facility. Where specified by the Principal, it shall be also possible to connect the UPS, via either a RS485 or fiber optic link to a DCS or SCADA system for selected analogue and digital data to be made available to a higher-level controller. The communication shall function utilizing standard MODBUS protocol (master/slave).
  - SNMP: Interface for remote monitoring and control via PC
  - PBM: Progress Battery Management (PBM) with temperature compensation
  - APM: Advanced Power Management (APM) - automated auto start of systems connected as a single system (APM) with an increase in load. Any combination of parallel, hot or cold standby
  - EPO: Emergency power off