TENDER DOCUMENT

NIT No.- DLI / C&E / WI-665 / 533

FOR

“Tender for Design, Engineering, manufacturing & testing at works, Supply, Supervision of testing and commissioning of 9 (Nine) Nos. 3Ph.-N 415V non draw out type Control Panels, for the Project of Augmentation of Raw Material Handling Receipt and Handling facilities with new OHP Part–B (Package–061) of Bhilai Steel Plant (SAIL)”

VOLUME- 2 C

(TENDER DRAWINGS)

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DLI / C&E / WI-665 / 533
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<th>Total sheets</th>
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<td>09 sheets</td>
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</table>
MAX DEMAND 42.75 KW

415V 3PH-N, 50HZ, NON DRAW OUT TYPE
LOCAL CONTROL PANEL
FOR WATER SUPPLY SYSTEM, LOCATION AT COMPRESSOR HOUSE

NOTES:
1. The rating of MCB/MCCB of 1A may vary for the different manufacturer.
2. However, we have taken as per Type-0, Co-ordination chart of last.
3. All equipment shall be tested in process line for MCB/MCCB of 1A shall be taken as per Type-0, Co-ordination chart.
4. PLC shall be in accordance with CE/TECHNICAL SPEC.
5. Local/remote selector switch will be mounted on control panel.
6. Control panel will be fire resistant, floor mounted, front attended.
7. All equipment will be rated for minimum 10% over load.
8. Control panel shell be furnished with CT, PT, metering and protection etc.
9. For scheme following shall be considered:
(A) Compressor Cooling Water Pump (CR4A4289)

MAXIMUM DEMAND CALCULATION

<table>
<thead>
<tr>
<th>SL NO</th>
<th>DESCRIPTION</th>
<th>RATE (KW)</th>
<th>QTY</th>
<th>WORK LIMIT (KW)</th>
<th>FAULT DUR (STD)</th>
<th>TOTAL DEMAND (KW)</th>
<th>REMARKS</th>
</tr>
</thead>
<tbody>
<tr>
<td>01</td>
<td>Compressor Cooling Water Pump</td>
<td>20</td>
<td>3</td>
<td>60</td>
<td>0.6</td>
<td>56</td>
<td>Pump 1A/60/0.6</td>
</tr>
<tr>
<td>02</td>
<td>EXHAUST FAN FOR COMPRESSOR HOUSE</td>
<td>1.5</td>
<td>5</td>
<td>7.5</td>
<td>0.9</td>
<td>8.75</td>
<td></td>
</tr>
<tr>
<td></td>
<td><strong>TOTAL LOAD = 42.75</strong></td>
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<td></td>
<td></td>
<td></td>
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</tr>
</tbody>
</table>

FOR TENDER PURPOSE ONLY
NOTES:

1. The rating of MCBs/MCCBs/G/L may vary for different manufacturers, however, we have taken as per Type-2, coordination chart of "LST".
2. Ratings of power contract shall be as per GTS & selection of rating for MCBs/MCCBs/G/L shall be taken as per Type-2, coordination chart.
3. ELP shall be provided as per GTS/TS.
4. SLU shall be read in conjunction with GTS/technical spec.
5. Selector switch shall be provided for selection of pump combination.
6. Local/remote selector switch will be mounted on control panel.
7. Control panel will be free-standing, floor mounted, front attended, made of CrCa sheet steel of thickness not less than 2mm with IP44 enclosure class. Power feeder will have load break switch or MCCB interlocked with the door.
8. Control panel shall be provided with CT, PT, metering and protection etc. as required.
9. The power supply voltage 415V +10% -15%, 50HZ +0% -6% S/C 50KA/1SEC.
10. For scheme following shall be considered
   (A) Service water pump (2W+2SB)
   (B) Draining water pump (1W+1SB)
   (C) SpdS pump (1W+1S)
   (D) Dust suppression pump (2W+1S)
   (E) Cooling water
   (F) Cooling water fan considered in conn MCC - 2

MAX DEMAND 134.010KW

415V 3Ph-N, 50Hz, non draw out type
Local control panel
For water supply
System
Location at
Pump house-1

FOR TENDER PURPOSE ONLY
MAX DEMAND 28.05 KW

FOR TENDER PURPOSE ONLY

NOTES:
1. THE RATING OF WPCB/WCCB/CCB MAY VARY FOR THE DIFFERENT MANUFACTURER, HOWEVER WE HAVE TAKEN AS PER TYPE-2, CD-OPERATION CHART OF BLT.
2. RATING OF POWER CONTRACTOR SHALL BE AS PER CTS & SELECTION OF RATING FOR WPCB/WCCB/CCB SHALL BE AS PER TYPE-2, CD-OPERATION CHART.
3. EASY SHALL BE PROVIDED AS PER CTS/DS.
4. SLU SHALL BE READ IN CONJUNCTION WITH CTS/TECHNICAL SPEC.
5. SELECTOR SWITCH SHALL BE PROVIDED FOR SELECTION OF PUMP CONSIDERATION.
6. LOCAL/REMOTE SELECTOR SWITCH WILL BE MOUNTED ON CONTROL PANEL.
7. CONTROL PANEL WILL BE FREE STANDING, FLOOR MOUNTED, FRONT ATTENDED.
8. CONTROLS PANEL SHALL BE PROVIDED WITH CT, PT, METERING AND PROTECTION ETC. AS REQUIRED.
9. THE POWER SUPPLY VOLTAGE 415V-3PH-50HZ, 50HZ, 46-64 X 100A, 50/60A @ 1 SEC. FAULT LEVEL AL BUS BAR
10. FOR SCHEME FOLLOWING SHALL BE CONSIDERED
    (A) SERVICE WATER PUMP (W2=250)
    (B) DRINKING WATER PUMP (W2=250)
    (C) DFS PUMP (W2=15)
11. FOR VENTILATION SYSTEM POWER FEEDER HAS BEEN CONSIDERED IN RESPECTIVE CONV MCC
MECON LIMITED
7.0 MTPA EXPANSION
BHILAI STEEL PLANT, BHILAI, CHHATTISGARH

DRG. NO. BSP- EPI-01-061-01-013-29-BE-03045
EPI-BSP-061-03-BE-03045

415V 3PH- N, 50HZ, LOCAL CONTROL PANEL FOR WATER SUPPLY SYSTEM, NON DRAWOUT TYPE LOCATION AT PUMP HOUSE-4

AUGMENTATION OF RAW MATERIAL RECEIPT & HANDLINGFacilities WITH NEW OHP, PART - B

SINGLE LINE DIAGRAM OF LOCAL CONTROL PANEL AT PH-4

MAX DEMAND 28.05 KW

INCOMER FROM 6F3 CONV MCC-4

415V, 4-10%, 15%, 50Hz, 460V-600V 100A, 50kA FOR 1 SEC. FAULT LEVEL, AL BUS BAR

ASS-A1 (0 - 100 A)

NOTES
1. ALL THE MATERIALS STATED ARE FOR THE ORDERED MANUFACTURER.
2. MATERIAL ISSUED FOR THE ORDERED MANUFACTURER IN THE ABOVE LIST ARE FOR THE ORDERED MANUFACTURER.
3. ALL THE MATERIALS STATED ARE FOR THE ORDERED MANUFACTURER.
4. ALL THE MATERIALS STATED ARE FOR THE ORDERED MANUFACTURER.
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7. ALL THE MATERIALS STATED ARE FOR THE ORDERED MANUFACTURER.
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9. ALL THE MATERIALS STATED ARE FOR THE ORDERED MANUFACTURER.
10. ALL THE MATERIALS STATED ARE FOR THE ORDERED MANUFACTURER.
11. ALL THE MATERIALS STATED ARE FOR THE ORDERED MANUFACTURER.
12. ALL THE MATERIALS STATED ARE FOR THE ORDERED MANUFACTURER.

MAXIMUM DEMAND CALCULATION

<table>
<thead>
<tr>
<th>S.NO.</th>
<th>DESCRIPTION</th>
<th>RATING (KW)</th>
<th>QTY.</th>
<th>WORK LOAD (KW)</th>
<th>FACTOR AS PER GTS</th>
<th>TOTAL MAX DEMAND (KW)</th>
<th>REMARKS</th>
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<tbody>
<tr>
<td>01</td>
<td>SERVICE WATER PUMP FOR PH-3</td>
<td>15</td>
<td>4</td>
<td>15</td>
<td>0.6</td>
<td>18</td>
<td>PUMP 12A/9/0/C/D (2W+25)</td>
</tr>
<tr>
<td>02</td>
<td>DRINKING WATER PUMP FOR PH-4</td>
<td>5.5</td>
<td>3</td>
<td>5.5</td>
<td>0.6</td>
<td>3.3</td>
<td>PUMP 14A/8/C (1W+25)</td>
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<tr>
<td>03</td>
<td>SFDS PUMP</td>
<td>7.5</td>
<td>2</td>
<td>7.5</td>
<td>0.9</td>
<td>6.75</td>
<td>PUMP 13A/8 (1W+15)</td>
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<td></td>
<td>TOTAL LOAD</td>
<td>28.05</td>
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FOR TENDER PURPOSE ONLY

DRAWN:... REVISED:... DATE:... SCALE:...
MAX DEMAND 33.75 KW

Panel Space Heater

Maximum Demand Calculation

<table>
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<tr>
<th>SL No</th>
<th>Description</th>
<th>Rating (KW)</th>
<th>QTY</th>
<th>Work Load (KW)</th>
<th>Load Factor</th>
<th>Peak Demand (KW)</th>
<th>Remarks</th>
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<tr>
<td>01</td>
<td>Service Water Pump for PH-5</td>
<td>15</td>
<td>4</td>
<td>30</td>
<td>0.6</td>
<td>18</td>
<td>Pump 15A/B/C/D (2W+2S)</td>
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<tr>
<td>02</td>
<td>Drinking Water Pump for PH-5</td>
<td>15</td>
<td>3</td>
<td>15</td>
<td>0.6</td>
<td>9</td>
<td>Pump 17A/B/C (1W+2S)</td>
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<tr>
<td>03</td>
<td>DFS Pump</td>
<td>7.5</td>
<td>2</td>
<td>7.5</td>
<td>0.9</td>
<td>6.75</td>
<td>Pump 16A/B (1W+1S)</td>
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<td>Total Load</td>
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<td>33.75</td>
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415V 3PH-N, 50Hz, Local Control Panel for Water Supply System, Non Drawout Type Location at Pump House-5

NOTES:
1. The drawing of microprocessor is not co-ordinated with other drawings.
2. Motor control center panel shall be fabricated according to specified details.
3. Control panel shall be fabricated as per IS: 4034, 1963.
4. Control panel shall be fabricated as per IS: 4034, 1963.
5. Control panel shall be fabricated as per IS: 4034, 1963.
6. Control panel shall be fabricated as per IS: 4034, 1963.
7. Control panel shall be fabricated as per IS: 4034, 1963.
8. Control panel shall be fabricated as per IS: 4034, 1963.
9. Control panel shall be fabricated as per IS: 4034, 1963.
10. Control panel shall be fabricated as per IS: 4034, 1963.

For Tender Purpose Only
MAX DEMAND 4.5 KW

415V 3PH-N, 50HZ, LOCAL CONTROL PANEL FOR DEWATERING PUMP SYSTEM, NON DRAWOUT TYPE LOCATION AT WT COMPLEX

NOTES:
1. THE RATING OF MPCB/MCCB/O/L MAY VARY FOR THE DIFFERENT MANUFACTURER.
2. RATING OF POWER CONTRACTOR SHALL BE AS PER CTS & A SELECTION OF RATING FOR MPCB/MCCB/O/L SHALL BE TAKEN AS PER TYPE-2, CO-ORDINATION CHART OF IAT.
3. ENCLOSURE SHALL BE PROVIDED AS PER IAT.
4. SLD SHALL BE READ IN CONJUNCTION WITH CTS/TECHNICAL SPEC.
5. SELECTOR SWITCH SHALL BE PROVIDED FOR SELECTION OF PUMP COMBINATION.
6. LOCAL/REMOTE SELECTOR SWITCH WILL BE MOUNTED ON CONTROL PANEL.
7. CONTROL PANEL WILL BE FREE STANDING, FLOOR MOUNTED, FRONT ATTENDED, MADE OF CORRUGATED STEEL, OF THICKNESS NOT LESS THAN 2MM WITH IP54.
8. ENCLOSURE CLASS: IN-COMER FEEDER WILL HAVE LOAD BREAK SWITCH OR MCCB INTERLOCKED WITH THE DOOR.
9. THE POWER SUPPLY VOLTAGE 415V +/-10%+-15%, 50HZ -6% G/C 50KA/1SEC.
10. FOR SCHEME FOLLOWING SHALL BE CONSIDERED [DEWATERING PUMP (2M4+2S4)].

FOR TENDER PURPOSE ONLY