TENDER DOCUMENT

NIT No DLI/C&E/WI-675/522

FOR


VOLUME- 2 C

(TENDER DRAWINGS)

ENGINEERING PROJECTS (INDIA) LIMITED
(A GOVT. OF INDIA ENTERPRISE)
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Lodhi Road, New Delhi-110003
TEL NO: 011-24361666  FAX NO. 011- 24363426
UPS LOAD REQUIREMENT & POWER DISTRIBUTION
FOR LTSS - 01 TO 05

AUGMENTATION OF FUEL & FLUX CRUSHING FACILITIES (PKG.- 064)
TOTAL LOAD
9127.6 VA

UPS LTSS - 1

AC 1PH 240V DISTRIBUTION BOARD

<table>
<thead>
<tr>
<th>LOAD REQ.</th>
<th>LOAD OF 7 TRIP UNIT 1 TO 7</th>
<th>LOAD OF MCOMP = 20VA</th>
<th>EACH UNIT LOAD IS 25 VA</th>
<th>EACH UNIT LOAD IS 25 VA</th>
<th>TOTAL LOAD = (98×5+98×2×49)W = 735 WATT VA = 7350.85 = 865 VA</th>
<th>EACH UNIT LOAD IS 75VA</th>
<th>EACH UNIT LOAD IS 5VA</th>
</tr>
</thead>
<tbody>
<tr>
<td>175 VA</td>
<td>Y11 - 207, Y7-35 (TOTAL 2NO.)</td>
<td>AS PER SCHNEIDER ELECTRIC LOAD CALCULATION</td>
<td>AS PER SCHNEIDER ELECTRIC LOAD CALCULATION</td>
<td>TOTAL 26NO.</td>
<td>2X36W LTG FIX IN C.C-1, CCC - 1CC, CCC - 1CC</td>
<td>FOR 4 NO. CRUSHER</td>
<td>1 NO. 2 NO. 05 NO. 10 NO.</td>
</tr>
<tr>
<td>2865.6 VA</td>
<td>2184 VA</td>
<td>650 VA</td>
<td>865 VA</td>
<td>1200VA</td>
<td>513VA 100VA 100VA 376VA 50VA</td>
<td></td>
<td></td>
</tr>
<tr>
<td>50 VA</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

1. TOTAL REQUIREMENT IS 9127.6 VA
2. LOAD REQUIRED WITH 65% SPARE = 14604.16 VA
3. 2.2% SPARE OUT GOING FEEDER SHALL BE PROVIDED IN DISTRIBUTION BOARD

HENCE UPS SELECTED 15 KVA (i.e. 15000 VA)
**TOTAL LOAD**

4445 VA

**UPS LTSS - 2**

**AC 1PH 240V DISTRIBUTION BOARD**

<table>
<thead>
<tr>
<th>EQP.</th>
<th>SPARE</th>
<th>PCS/BSS ADD CONTROL PANEL</th>
<th>LSTTB</th>
<th>SPARE</th>
<th>EMG. LIGHT</th>
<th>EMG. LIGHT</th>
<th>LOAD OF MCOMP CONTROLLER</th>
<th>R/O LOAD</th>
</tr>
</thead>
<tbody>
<tr>
<td>LOAD REQ.</td>
<td>225 VA</td>
<td>300 VA</td>
<td>230 VA</td>
<td>345 VA</td>
<td>1425 VA</td>
<td>1920 VA</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**LOAD OF 9 TRIP UNIT (1 TO 9)**

1. TOTAL REQUIREMENT IS 4445VA
2. LOAD REQUIRED WITH 60% SPARE = 7112VA
3. 20% SPARE OUT GOING FEEDER SHALL BE PROVIDED IN DISTRIBUTION BOARD

**HENCE UPS SELECTED 7.5 KVA (i.e. 7500 VA)**

**REMARKS**

- EACH UNIT LOAD IS 25 VA PER AS SUPPLIER SPEC (25 X 9 = 225 VA)
- EACH UNIT LOAD IS 75VA
- TOTAL LOAD = (98 X 2)W = 196 WATT
  VA = 196/0.85 = 230VA
- TOTAL LOAD = (98 X 3)W = 294 WATT
  VA = 294/0.85 = 345VA
- EACH UNIT LOAD IS *25 VA
- AS PER SCHNEIDER ELECTRIC LOAD CALCULATION

**HIGHLIGHTS**

- LOAD OF MCOMP = 20VA
- LOAD OF DISPLAY UNIT = 5 VA
- HENCE TOTAL LOAD OF ONE UNIT = 25VA

**LOAD OF 2X36W LTG FIXTURE = 98 WATT**

**ELECTRICAL-CD&G**

**MICON, RANCHI -2**

**18 JUN 2015**
TOTAL LOAD
19309.6 VA

AC 1PH 240V DISTRIBUTION BOARD

** Remarks:**
- LOAD OF MCOMP = 20VA
- LOAD OF DISPLAY UNIT = 5 VA
- HENCE TOTAL LOAD OF ONE UNIT = 25VA
- LOAD OF 2X36W LTG FIXTURE = 98WATT

** Load Requirement:**
1. TOTAL REQUIREMENT IS 19309.6VA
2. LOAD REQUIRED WITH 60% SPARE = 30895.36VA
3. 20% SPARE OUT GOING FEEDER SHALL BE PROVIDED IN DISTRIBUTION BOARD

HENCE UPS SELECTED 32KVA (i.e. 32000 VA)
TOTAL LOAD
2571 VA

UPS LTSS - 4

AC 1PH 240V DISTRIBUTION BOARD

<table>
<thead>
<tr>
<th>EQP.</th>
<th>PCS/ESS ADD CONTROL PANEL</th>
<th>SPARE</th>
<th>EMG. LIGHT, CABLING CELLER, VENT, RM</th>
<th>SPARE</th>
<th>EMG. LIGHT IN UPS ROOM</th>
<th>SPARE</th>
<th>EMG. LIGHT IN CONV MCC ROOM</th>
<th>SPARE</th>
<th>EMG. LIGHT IN NI MCC ROOM</th>
<th>SPARE</th>
<th>R/I/O LOAD</th>
</tr>
</thead>
<tbody>
<tr>
<td>LOAD REQ.</td>
<td>225 VA</td>
<td>230 VA</td>
<td>115 VA</td>
<td>115 VA</td>
<td>115 VA</td>
<td>115 VA</td>
<td>1656VA</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
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</table>

LOAD OF 9 TRIP UNIT (1 TO 9)

<table>
<thead>
<tr>
<th>EACH UNIT LOAD</th>
<th>TOTAL LOAD</th>
<th>TOTAL LOAD</th>
<th>TOTAL LOAD</th>
</tr>
</thead>
<tbody>
<tr>
<td>25 VA PER SUPPLIER SPEC (26 X 9 = 225 VA)</td>
<td>=98 X 2W = 196WATT</td>
<td>=98 WATT</td>
<td>=98 WATT</td>
</tr>
<tr>
<td>VA = 190/0.85 = 230VA</td>
<td>VA = 98/0.85 = 115VA</td>
<td>VA = 98/0.85 = 115VA</td>
<td></td>
</tr>
</tbody>
</table>

AS PER SCHNEIDER ELECTRIC LOAD CALCULATION

HENCE UPS SELECTED 5 KVA (i.e. 5000 VA)

1. TOTAL REQUIREMENT IS 2571VA
2. LOAD REQUIRED WITH 60% SPARE = 4113.6VA
3. 20% SPARE OUT GOING FEEDER SHALL BE PROVIDED IN DISTRIBUTION BOARD

* LOAD OF MCOMP = 20VA
* LOAD OF DISPLAY UNIT = 5 VA
* HENCE TOTAL LOAD OF ONE UNIT = 25 VA

# LOAD OF 2X36W LTG FIXTURE = 98WATT
TOTAL LOAD 9242.4 VA

AC 1PH 240V DISTRIBUTION BOARD

<table>
<thead>
<tr>
<th>EQUIPMENT</th>
<th>LOAD REG.</th>
</tr>
</thead>
<tbody>
<tr>
<td>PCS/BSS ADD CONTROL PANEL</td>
<td>225 VA</td>
</tr>
<tr>
<td>EMG. LIGHT IN VENTILATION ROOM - 1</td>
<td>346 VA</td>
</tr>
<tr>
<td>EMG. LIGHT IN RIO ROOM, UPS ROOM</td>
<td>231 VA</td>
</tr>
<tr>
<td>EMG. LIGHT IN CABLE CELLER-2, STAIR CASE</td>
<td>346 VA</td>
</tr>
<tr>
<td>FCMA</td>
<td>1200 VA</td>
</tr>
<tr>
<td>LVL SW</td>
<td>40 VA</td>
</tr>
<tr>
<td>RIO LOAD</td>
<td>6854.4 VA</td>
</tr>
<tr>
<td>SPARE</td>
<td></td>
</tr>
</tbody>
</table>

LOAD OF 9 TRIP UNIT (1 TO 9)

<table>
<thead>
<tr>
<th>EACH UNIT LOAD IS 25 VA PER SUPPLIER SPEC (25 X 3 = 225 VA)</th>
</tr>
</thead>
<tbody>
<tr>
<td>TOTAL LOAD 48X2 + 49X2 = 294WATT</td>
</tr>
<tr>
<td>TOTAL LOAD 49X2 + 98 = 196WATT</td>
</tr>
<tr>
<td>EACH UNIT LOAD IS 5VA AS PER SCHNEIDER ELECTRIC CALCULATION PROCESS PANEL</td>
</tr>
</tbody>
</table>

LOAD OF MCOMP = 20VA
LOAD OF DISPLAY UNIT = 5VA
HENCE TOTAL LOAD OF ONE UNIT = 25VA

# LOAD OF 2X36W LTG FIXTURE = 96 WATT

1. TOTAL REQUIREMENT IS 9242.4VA
2. LOAD REQUIRED WITH 60% SPARE = 14767.84VA
3. 20% SPARE OUT GOING FEEDER SHALL BE PROVIDED IN DISTRIBUTION BOARD
HENCE UPS SELECTED 15 KVA (i.e. 15000VA)