Sub: Minor Fabrication - invitation to quote.

Dear Sirs,

1. Sealed quotations are invited by undersigned for and on behalf of the President of India for the minor fabrication work as per the requirements given in the technical Specification (Annexure-I).

2. The quotation shall be complete in all respects with regard to price, specifications, completion period, validity of the offer, etc. and must reach on or before 14/11/2019 by 16.00 Hrs. The quotation shall be on printed letter head mentioning complete address, Phone numbers, fax number, PAN number/ GST registration/TIN etc., without these details quotation will be liable for rejection. The envelope should be superscribed “Minor Fabrication” and should indicate this office Ref. No. and due date clearly. The envelope should be sealed.

3. The quotation shall be sent only by Speed Post.

I. SCOPE OF THE WORK: Please refers to the enclosed Annexure-I, which describes the detail specifications & scope of the work.

II. FREE ISSUE MATERIALS: As per technical specifications Annexure-I.

III. GENERAL INSTRUCTIONS

1. The earliest period by which the job can be executed in totality should be clearly stated in the quotation and such period should be strictly adhered to in the event of a work-order. However, the entire work is to be completed within 3 (Three) months reckoned from the 5th day after the date of issue of the work order, depending on the site availability.

2. Taxes, duties, if any, applicable shall be indicated separately.

3. Please note that the goods proposed to be fabricated based on this NIT (Notice Inviting Tender) is meant for the Research Institution under the Dept. of Atomic Energy. The purchaser will make available (if required and applicable) to the successful bidder with whom a work order is placed the GST exemption certificate duly signed by the authorised officer in the Dept. of Atomic Energy well before the dispatch of the goods by the supplier.

4. Place of work: Engineering, Hall No. 3 & 7, Trombay, Mumbai-400085.

5. Inspection as per specification shall be carried out departmentally after the completion of the work to the satisfaction of the Engineer in-charge. Inspection regarding the work according to specification, checking of the site etc. will be carried out continuously by the Engineer in-charge or his authorised representative.

6. The contractor shall have to maintain the area assigned to him for the work very clean and shall follow the instructions of Engineer in-charge in this regard. All equipment/tools etc. are to be removed and cleaned the area after the end of the day's work.

7. The bidders, who wish to inspect the site before quoting, may do so with prior appointment with our engineer Shri R. R. Singh on telephone no. 25591590/7167.

8. Payment will be made by cheque/ECS after satisfactory completion of the work as per Government rules. Income Tax @ 2% will be deducted from the bill.

9. Bidder shall note that BARC is final consumer of the goods/services procured and does not intends to make any outward supply. BARC will not avail the benefits of input tax credit and hence, the good can be supplied without quoting the GSTIN of BARC, Mumbai on invoice. The invoices taxed under GST, as per rates applicable under the GST schedule of rates, will be admitted for payment.
10). **GSTN Invoice**: The invoice raised by the registered supplier of taxable goods/services along with other details specifically indicating: GSTN, PAN, Location of supply, tax component to be separately indicated.

11). An undertaking shall be furnished by the registered supplier that the GST has been promptly deposited with the authorities.

12). Recovery of TDS on GST in case of payment of invoices for supply under contract exceeding Rs.2.50 Lakh.

13). With your offer please furnish the detailed information regarding whether an ex-employee of BARC is working in your organisation or whether any of your relatives is working in DAE/BARC or you are an ex-employee of DAE/BARC. In absence of such information or wrong information, the quotation or contract is likely to be rejected/cancelled.

14). **Confidentiality**: No party shall disclose any information to any third party concerning the matters under this contract generally. In particular, any information identified as proprietary in nature by the disclosing party shall be kept strictly confidential by the receiving party and shall not be disclosed to any third party without the prior written consent of the original disclosing party. This clause shall apply to the sub contractors, consultants, advisers or the employees engaged by the party with equal force.

15). **Restricted information categories under section 18 of the Atomic Energy Act, 1962 and "Official Secrets" under section 5 of the official secret act, 1923**: Any contravention of the above mentioned provisions by any contractor, sub contractor, consultant, adviser or the employees of a contractor will invite penal consequences under the aforesaid legislation.

16). **Prohibition against use of BARC's name without permission for publicity purposes**: The contractor or sub contractor, consultant, adviser or the employees engaged by the contractor shall not use BARC's name for any publicity purpose through any public media like press, radio, T.V. or Internet without prior approval of BARC.

17). **Safety Precautions**: The contractor will follow all the good industrial safety rules required during the execution of work. He will have to compulsorily follow other safety instructions issued by engineer-in-charge from time to time. The contractor shall provide all safety gears to their workmen at site and all safety rules shall be strictly followed. Any injury/accident caused to their persons while working inside BARC shall be the full responsibility of the contractor.

18). **Police Clearance**: The bidder shall note that entry inside BARC is restricted and it is compulsory for contractor to get police clearance (as prescribed by security section of BARC) for all his staff who will be entering BARC for work.

19). The work can be carried out on all working days between 9.30 hrs to 17.30 hrs.

20). The offer shall be kept valid for a period of 60 days from the date of opening of the tender.

21). Purchasing authority reserves the right to alter the quantity while placing the order.

22). *Department* reserves the right to accept or reject any or all the quotations received without assigning any reasons whatsoever.

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(A. K. Lal)

*Scientific Officer – H*

*Head, Project Planning & Engineering Support Section*

*For and on behalf of President of India*

*Encl. : (Annexure –I),*
Technical Specifications

Part-I
Scope of Work

Wiring & installation work for Rechargeable LED lights & other miscellaneous lighting work including wiring, testing and commissioning of the lighting system etc.

Description of work:

A. EB-XL Wires:

1. The wires (multi-strand AC conductor, E-beam irradiated FR-PVC insulated, unsheathed flexible wire) required for the wiring of rechargeable LED lights power circuit shall be supplied by the bidder. The wires will be inspected and tested before delivery to the site.

2. Technical Requirements:

The wires shall be designed, manufactured and tested in accordance with following International and National Standards:

<table>
<thead>
<tr>
<th>National Standard</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>IS-694-2010</td>
<td>Polyvinyl Chloride insulated unsheathed and sheathed cables/cords with rigid and flexible conductor for rated voltages up to and including 450/750V.</td>
</tr>
<tr>
<td>IS-5831</td>
<td>Specification for PVC insulation and sheath of electrical cables</td>
</tr>
<tr>
<td>IS-10810</td>
<td>Specifications for Methods of test for cables</td>
</tr>
<tr>
<td>IS-8130</td>
<td>Specification for conductors for insulated electric cables and flexible cords</td>
</tr>
<tr>
<td>IS-10418</td>
<td>Specifications for Drums for electric cables</td>
</tr>
</tbody>
</table>

3. Technical Particulars:

<table>
<thead>
<tr>
<th>Required quantity:</th>
</tr>
</thead>
<tbody>
<tr>
<td>EBXL insulated copper conductor unsheathed flexible wires</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Size</th>
<th>Colour</th>
<th>Quantity</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. 1CX1.50mm²</td>
<td>Red</td>
<td>1000 meters</td>
</tr>
<tr>
<td>2. 1CX1.50mm²</td>
<td>Black</td>
<td>1000 meters</td>
</tr>
<tr>
<td>3. 1CX1.50mm²</td>
<td>Green</td>
<td>1000 meters</td>
</tr>
</tbody>
</table>

±10% in quantity is acceptable

1100 Volts Flexible AC conductor, FR-PVC (EBXL) Insulted wire (unsheathed)

<table>
<thead>
<tr>
<th>Sr. No.</th>
<th>Particulars</th>
<th>Unit</th>
<th>1X1.5mm²</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Applicable standard</td>
<td></td>
<td>IS:694/2010</td>
</tr>
<tr>
<td>2.</td>
<td>Voltage Grade</td>
<td>Volts</td>
<td>1100</td>
</tr>
<tr>
<td>3.</td>
<td>Type of cable</td>
<td></td>
<td>AC/FR-PVC (EBXL)</td>
</tr>
<tr>
<td>4.</td>
<td>Cross Sectional Area of Conductor</td>
<td>Nos.Xmm²</td>
<td>1X1.5</td>
</tr>
<tr>
<td>5.</td>
<td>Conductor material &amp; shape</td>
<td></td>
<td>Annealed Tinned Copper, stranded circular flexible , Class-5</td>
</tr>
<tr>
<td>6.</td>
<td>FR PVC (EBXL) insulation - 105°C (nominal thickness)</td>
<td>mm</td>
<td>0.7</td>
</tr>
<tr>
<td></td>
<td>Core identification</td>
<td>RED/Black/Green</td>
<td></td>
</tr>
<tr>
<td>---</td>
<td>---------------------</td>
<td>-----------------</td>
<td></td>
</tr>
<tr>
<td>8.</td>
<td>Approximate overall dia. of cable</td>
<td>mm</td>
<td>2.85</td>
</tr>
<tr>
<td>9.</td>
<td>Packing – standard packing length</td>
<td>meters</td>
<td>500 in coil</td>
</tr>
<tr>
<td>10.</td>
<td>Max. D.C. Resistance of conductor at 20°C</td>
<td>Ω/km</td>
<td>13.30</td>
</tr>
<tr>
<td>11.</td>
<td>Continuous current carrying capacity</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>In conduit/trunking</td>
<td>Amps.</td>
<td>20</td>
</tr>
<tr>
<td></td>
<td>Unenclosed-clipped directly to surface or on cable tray</td>
<td>Amps.</td>
<td>32</td>
</tr>
<tr>
<td>12.</td>
<td>FR Properties</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Min. critical oxygen index value (as per ASTM-D-2863)</td>
<td>%</td>
<td>≥ 29</td>
</tr>
<tr>
<td></td>
<td>Temperature withstand</td>
<td>°C</td>
<td>105</td>
</tr>
<tr>
<td></td>
<td>Min. Temperature index (as per ASTM-D-2863)</td>
<td>°C</td>
<td>≥250</td>
</tr>
<tr>
<td>13.</td>
<td>Embossing/printing</td>
<td>IS:694 ISI Mark with licenses number, meter, size, voltage rating, etc.</td>
<td></td>
</tr>
</tbody>
</table>

4. Tests:

The bidders shall clearly state as to what extent testing of the wires will be offered. The facilities shall be provided by the bidder to purchaser’s representative for witnessing the tests in the manufacturer’s works. The quantity of wires required for testing is in the scope of supplier. The supplier shall provide the required length of cables for testing (the order quantity shall be supplied after testing).

Type Test:

Supplier can claim exemption from carrying out type test, provided such type test were already conducted for DAE/BARC in the past within five years with test certificates.

Routine Tests:

All the Routine tests as per applicable IS, amended upto date shall be carried out on each and every delivery length of cable. The result should be given in test report. The following tests will be carried out on the complete length of all the cable:
- Conductor resistance test
- High voltage test

B. MCB distribution boards Components:

The concealed type, 3-Phase, 4-Way (8+12 module) Fuse distribution board (DB) with Metallic doors are exists at site (02 Nos.). The fuse based DB shall be converted to MCB DB with required hardware and wiring. The timer (programmable for 365 days 24X7, DIN channel mounting type, of **Legrand/Hager** make shall be provided in each DB with incomer of 32A, 4P, RCBO (hi-immunity) and outgoing as 10A, SP, 10kA, C-curve MCBs (16Nos. in each DB) and other hardware required for the completion of work. The insulation resistance of the assembled DB shall be checked and tested. Outgoing feeders for each circuit shall be neatly arranged in cable alley. The circuit drawing (single line drawing) shall be prepared as per the wiring. The DB shall be coated with primer and subsequently with two coats of epoxy paint. The cable and conduits shall be terminated with required hardware (glands etc.) The frame and DB shall be earthed at two locations with 2.5/4mm² copper wires.
C. Termination of Power cable:

The 4CX4/6mm², copper conductor, XLPE insulated, armoured cable shall be installed on the wall/ceiling etc. with GI spacer and saddles (heavy gauge). While installing the cables on wall for termination (at both ends – two termination) in the MCB DB, contractor shall ensure that there should not be any formation of twist in the cable. The cable shall be secured with nylon cable ties in the cable tray. The distance between the consecutive spacer shall not be more than 500mm and the bends of the cable shall be saddled as per standard engineering practices. The 2.5/4mm² copper conductors shall be laid along with cable for earthing of the system. The termination of the cables shall be carried out with single compression, heavy duty brass cable glands and copper lugs. The lug and cable gland will be brought by the contractor. Supplier shall ensure that standard engineering practices shall be followed while carrying out the power cable termination. The supplier shall carry out the testing of cable with respect to insulation resistance and continuity, prior to installation and after installation as a commissioning procedure.

D. Wiring:

The LED lights of various configurations and specifications (details as per the site requirement) shall be installed and their hardware shall be assembled and wired as per the instruction of the Engineer in-charge. The wiring shall be carried out with EBXL wires. The lighting fixtures are surface /recess mounted type and their installation on wall/ceiling/structure members shall be carried out as per standard engineering practices.

The medium duty PVC conduit shall be installed with GI spacer and saddles and bend, junction boxes, coupling etc. shall be used as per the site requirements. The termination of the conduit in the lighting fixtures shall be PVC bushes etc. The lighting fixtures shall be wired and connected through 1.5mm² copper conductors, EBXL insulated wire.

E. Components:

**PVC conduct and accessories:** The medium duty PVC conduit shall be installed with GI spacer and saddles and bend, junction boxes, coupling etc. shall be used as per the site requirements. The termination of the conduit in the lighting fixtures shall be PVC bushes etc. The wiring shall be carried out using colour codes for phase, neutral and earth. The DB and lighting fixtures shall be earthed as per the standard engineering practices.

**Miscellaneous work:** The work related with assembly and wiring of distribution boards, conduit, lighting fixtures etc. may require unforeseen site constraints, which are to be considered by the contractor for completion of work at site as per the instructions and guidelines issued by the engineer in-charge. The miscellaneous work includes uncoiling of power cables, breaking of walls, installation of scaffolding etc.

F. Supply and installation of lighting fixtures

1) **K-lite/Philips/Wipro/Havells make** recess spot LED luminaire, 7W for false ceiling installation complete with driver (THD: ≤10%) suitable for 240V, 50Hz, AC and installation accessories shall be supplied by the contractor. The construction of fixtures shall be of sheet metal with powder coating with sturdy holders, fire proof wiring and connectors. The lighting fixtures are to be installed in place of 11W LED lighting fixtures installed in false ceiling. The removed fixtures are to be disposed-off at designated place, as per the instruction of engineer in-charge.
<table>
<thead>
<tr>
<th>Make</th>
<th>K-Lite ID-7095, TRISHA - SPECK</th>
</tr>
</thead>
<tbody>
<tr>
<td>Wattage</td>
<td>7W</td>
</tr>
<tr>
<td>Nominal Voltage</td>
<td>240V, 50Hz single phase AC supply</td>
</tr>
<tr>
<td>Mounting</td>
<td>Recess</td>
</tr>
</tbody>
</table>
| Feature                            | The housing shall be constructed from die-cast aluminium for better thermal management finished with white epoxy polyester powder coating.  
- Interchangeable LED optics  
- Die-cast aluminium trim ring with elegant appearance and varied finished |
| Working Life                       | L70B50: 50000 hours            |
| Operating temperature              | -10 °C to +45 °C               |
| Operating voltage range            | 140 - 270V AC, 50Hz            |
| Power Factor                       | ≥0.95                          |
| THD                                | ≤10 %                          |
| Colour Temperature                 | 4000 K (Neutral White)         |
| CRI                                | ≥80                            |
| Cut size                           | Ø93                            |
| Overall size                       | Ø108                           |
| IP rating                          | IP20                           |
| Marking                            | BIS, CE                        |

2) *Tulip/Philips/Wipro/Havells make* 300mm X 300mm LED luminaire, 15/20W for false ceiling installation complete with driver (THD: ≤10%) suitable for 240V, 50Hz, AC and installation accessories shall be supplied by the contractor. The construction of fixtures shall be of sheet metal with powder coating with sturdy holders, fire proof wiring and connectors. The lighting fixtures are to be installed in place of 2X18W CFL lighting fixtures installed in false ceiling with hanger rods. The removed fixtures are to be disposed-off at designated place, as per the instruction of engineer in-charge.

<table>
<thead>
<tr>
<th>Make</th>
<th><em>Havells PLUTO 1x1</em></th>
</tr>
</thead>
<tbody>
<tr>
<td>Wattage</td>
<td>15W</td>
</tr>
<tr>
<td>Nominal Voltage</td>
<td>240 V, AC, 50Hz</td>
</tr>
<tr>
<td>Mains Current</td>
<td>0.075 A</td>
</tr>
<tr>
<td>Mounting</td>
<td>Recess</td>
</tr>
<tr>
<td>Feature</td>
<td>Ultra modern recess mounting luminaire with high brightness SMD LEDs as light source Long life &amp; photo-biologically safe LED's</td>
</tr>
<tr>
<td>Working Life</td>
<td>L70B50: 50000 hours</td>
</tr>
<tr>
<td>Operating temperature</td>
<td>-10 °C to +45 °C</td>
</tr>
<tr>
<td>Operating voltage range</td>
<td>140 - 270V AC, 50Hz</td>
</tr>
<tr>
<td>Power Factor</td>
<td>≥0.95</td>
</tr>
<tr>
<td>THD</td>
<td>≤10 %</td>
</tr>
<tr>
<td>Colour Temperature</td>
<td>5700 K</td>
</tr>
<tr>
<td>CRI</td>
<td>≥80</td>
</tr>
<tr>
<td>System Lumens</td>
<td>1200 lm</td>
</tr>
<tr>
<td>Colour of Fixture</td>
<td>White</td>
</tr>
<tr>
<td>DIMENSION</td>
<td>29.5 cm x 29.5 cm x 7 cm</td>
</tr>
<tr>
<td>Class Declaration</td>
<td>Class II</td>
</tr>
<tr>
<td>IP rating</td>
<td>IP20</td>
</tr>
<tr>
<td>IK rating</td>
<td>IK03</td>
</tr>
</tbody>
</table>
3) **Argo Lighting Cynosure B/T 1X2/Havells** make recess type luminaire 280mm X 580mm LED luminaire, 36W for false ceiling installation complete with driver (THD: ≤10%) suitable for 240V, 50Hz, AC and installation accessories shall be supplied by the contractor. The construction of fixtures shall be of sheet metal with powder coating with sturdy holders, fire proof wiring and connectors. The lighting fixtures are to be installed in place of 2X20W fluorescent lighting fixtures installed in false ceiling with hanger rods/angle support. The removed fixtures are to be disposed-off at designated place, as per the instruction of engineer in-charge.

<table>
<thead>
<tr>
<th>Construction</th>
<th>Passive cooling design for heat dissipation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mechanical</td>
<td></td>
</tr>
<tr>
<td>Housing Material</td>
<td>M.S. CRCA</td>
</tr>
<tr>
<td>Finish</td>
<td>Powder coating</td>
</tr>
<tr>
<td>Housing Colour</td>
<td>White</td>
</tr>
<tr>
<td>Diffuser</td>
<td>PS Diffuser</td>
</tr>
<tr>
<td>Finish</td>
<td>White</td>
</tr>
<tr>
<td>Dimension (L x W x H)</td>
<td>632L X 332W X 120Ht</td>
</tr>
<tr>
<td>Cut Out Dimension</td>
<td>280X580mm</td>
</tr>
<tr>
<td>Mounting</td>
<td>Recess Mount</td>
</tr>
<tr>
<td>Ingress Protection</td>
<td>IP20</td>
</tr>
<tr>
<td>Electrical</td>
<td></td>
</tr>
<tr>
<td>Input Voltage</td>
<td>230V</td>
</tr>
<tr>
<td>Wattage</td>
<td>36 W(+/-10%)</td>
</tr>
<tr>
<td>PF</td>
<td>0.95</td>
</tr>
<tr>
<td>THD(i)</td>
<td>&lt;10%</td>
</tr>
<tr>
<td>Frequency</td>
<td>50~60 Hz</td>
</tr>
<tr>
<td>Volt Range</td>
<td>140-300V</td>
</tr>
<tr>
<td>Driver Type</td>
<td>Isolated</td>
</tr>
<tr>
<td>Surge Protection</td>
<td>4.0KV</td>
</tr>
<tr>
<td>Driver make</td>
<td>Philips, Osram, Fulham</td>
</tr>
<tr>
<td>Optical</td>
<td></td>
</tr>
<tr>
<td>LED Make</td>
<td>Bridgelux, Citizen, Lumiled, Cree/Osram</td>
</tr>
<tr>
<td>LED Lumen</td>
<td>160 lm / watt</td>
</tr>
<tr>
<td>LED Life</td>
<td>50,000 hrs</td>
</tr>
<tr>
<td>Luminous Flux</td>
<td>5600 lm</td>
</tr>
<tr>
<td>CCT</td>
<td>6500k</td>
</tr>
<tr>
<td>CRI</td>
<td>&gt;80</td>
</tr>
<tr>
<td>Beam Angle</td>
<td>120°</td>
</tr>
<tr>
<td>Operating Temp</td>
<td>-20°C ~ +40°C</td>
</tr>
</tbody>
</table>

4) **Philips/Wipro/Havells** make bulkhead surface mounting type, LED luminaire, 12W for wall installation complete with driver (THD: ≤10%) suitable for 240V, 50Hz, AC and installation accessories shall be supplied by the contractor. The construction of fixtures shall be of metal with powder coating with sturdy holders, fire proof wiring and connectors. The lighting fixtures are to be installed in place of 100W incandescent lamp bulkhead fixtures installed in lift shaft. The removed fixtures are to be disposed-off at designated place, as per the instruction of engineer in-charge.

<table>
<thead>
<tr>
<th>Make</th>
<th>Garnet 12W LED Bulkhead</th>
</tr>
</thead>
<tbody>
<tr>
<td>Protection</td>
<td>IP 65</td>
</tr>
<tr>
<td>Application</td>
<td>Outdoor</td>
</tr>
<tr>
<td>Feature</td>
<td>LM80 tested LED Technology</td>
</tr>
<tr>
<td>High efficiency diffuser for brighter light without glare</td>
<td></td>
</tr>
<tr>
<td>High voltage protection till 380V &amp; surge protection till 2.5KV</td>
<td></td>
</tr>
<tr>
<td>Wattage</td>
<td>12W</td>
</tr>
<tr>
<td>Colour Temp.</td>
<td>6500K</td>
</tr>
<tr>
<td>Lumens (lm)</td>
<td>1100</td>
</tr>
</tbody>
</table>
5) Philips/Wipro/Havells make surface mounting type, outdoor LED luminaire, 15W for ceiling installation complete with driver (THD: ≤10%) suitable for 240V, 50Hz, AC and installation accessories shall be supplied by the contractor. The construction of fixtures shall be of metal with powder coating with sturdy holders, fire proof wiring and connectors. The lighting fixtures are to be installed on the available concealed junction boxes.

<table>
<thead>
<tr>
<th>Make</th>
<th>Syska/Wipro 15W LED Surface Mount Square Ceiling Light</th>
</tr>
</thead>
<tbody>
<tr>
<td>Protection</td>
<td>IP 65</td>
</tr>
<tr>
<td>Application</td>
<td>Outdoor</td>
</tr>
<tr>
<td>Feature</td>
<td>LM80 tested LED Technology</td>
</tr>
<tr>
<td></td>
<td>High efficiency diffuser for brighter light without glare</td>
</tr>
<tr>
<td></td>
<td>High voltage protection till 300V &amp; surge protection till 2.5KV</td>
</tr>
<tr>
<td>Wattage</td>
<td>15W</td>
</tr>
<tr>
<td>Colour Temp.</td>
<td>6500K</td>
</tr>
<tr>
<td>Input Voltage</td>
<td>AC 90-300V 50Hz</td>
</tr>
<tr>
<td>Lumens (lm)</td>
<td>1100</td>
</tr>
<tr>
<td>Operating Temp.</td>
<td>-20° to 40° C</td>
</tr>
<tr>
<td>CRI</td>
<td>More than 80</td>
</tr>
</tbody>
</table>

6) Prolite make surface mounting type, rechargeable available at site are to be installed with suitable hardware and as per the instruction of Engineer in-charge. The LED emergency lights to be checked and tested before installation at site. The connection of the rechargeable LED lights shall be made as per the guidelines provided by the manufacturer. The contractor shall take utmost care in handling of the LED lighting fixtures.

Legends:

The lighting fixtures, MCB DBs shall be stenciled with paint as per the site requirement and instructions of engineer in-charge. The exact information about legend will be furnished while finalizing the work order.

(Part-II)

FREE ISSUE MATERIAL - NIL

(Part-III)

PREAMBLE TO SCHEDULE OF QUANTITIES

1. The work is to be planned and executed so as to cause least disturbance to the functioning of other activities. Materials shall be stacked only at specified locations as directed by Engineer-in-Charge to cause least obstruction to the movement of personnel in and around plant buildings.

2. The bidders are advised in their own interest to visit the proposed site of work to get acquainted themselves with the site and the working conditions as also the nature and minimum standard of work expected of them.

3. The bidders shall carefully go through the clauses in the invitation to quote, General term and conditions including safety code, etc., and shall include in their rates any sum they may consider necessary to cover the fulfilment of the various clauses contained therein. The items of work and unit rates quoted shall be inclusive of everything necessary to complete the said items of work, within the contemplation of the contract. Beyond the unit rates, no extra payment will be allowed for incidental or contingent work, labour, materials and plant.

4. The rates quoted by the bidder shall also include for:
   i) Supplying, transporting to site, unloading, protecting and installation of materials in accordance with the specifications.
   ii) Protecting all installed equipment in the area of work falling within the scope of this contract.
   iii) Following all the safety and security rules and regulations as required by the Department including deploying supervisor exclusively for safety.
**SCHEDULE OF QUANTITIES**

<table>
<thead>
<tr>
<th>Sr.</th>
<th>Description</th>
<th>Qty.</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Wire, Cables &amp; Conduits</td>
<td></td>
</tr>
<tr>
<td>(a)</td>
<td>1CX1.5sq.mm, EBXL, FR-PVC insulated, bright annealed, multi-strand copper conductor flexible cable for voltage grade upto 1100 volts as per IS:694:1990 (APAR) - RED</td>
<td>1000 meter</td>
</tr>
<tr>
<td>(b)</td>
<td>1CX1.5sq.mm, EBXL, FR-PVC insulated, bright annealed, multi-strand copper conductor flexible cable for voltage grade upto 1100 volts as per IS:694:1990 (APAR) - BLACK</td>
<td>1000 meter</td>
</tr>
<tr>
<td>(c)</td>
<td>1CX1.5sq.mm, EBXL, FR-PVC insulated, bright annealed, multi-strand copper conductor flexible cable for voltage grade upto 1100 volts as per IS:694:1990 (APAR) - GREEN</td>
<td>1000 meter</td>
</tr>
<tr>
<td>(d)</td>
<td>1&quot; PVC conduit (Precision make) - off-white/Grey colour</td>
<td>500 meter</td>
</tr>
<tr>
<td>2.</td>
<td>LED Luminaire</td>
<td></td>
</tr>
<tr>
<td>(a)</td>
<td>Supply and installation of 7W recess Spot light</td>
<td>15 Nos.</td>
</tr>
<tr>
<td>(b)</td>
<td>Supply and installation of 300X300mm - 20 Watts. Wipro</td>
<td>25 Nos.</td>
</tr>
<tr>
<td>(c)</td>
<td>Supply and installation of 1X2, 36W LED Luminaire</td>
<td>30 Nos.</td>
</tr>
<tr>
<td>(d)</td>
<td>Supply and installation of Bulkhead, Garnet 12W LED Bulkhead, IP-65, 6500K</td>
<td>25 Nos.</td>
</tr>
<tr>
<td>(e)</td>
<td>Supply and installation of Surface mounting IP-68 Square type, 15W LED lighting fixture.</td>
<td>12 Nos.</td>
</tr>
<tr>
<td>(f)</td>
<td>Installation of Prolite make LED Rechargeable lights</td>
<td>120 Nos.</td>
</tr>
<tr>
<td>3.</td>
<td>Supply &amp; installation MCB Distribution boards Components</td>
<td></td>
</tr>
<tr>
<td></td>
<td>(i) Timer - (Legrand/Hager Make) - 02 No.</td>
<td>01 Set</td>
</tr>
<tr>
<td></td>
<td>(ii) 32A, 4P, RCBO (Cat. No. 4113 34) - 02 No.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>(iii) 20A, 10kA, SP MCB (cat. 4085 93) - 32 Nos.</td>
<td></td>
</tr>
<tr>
<td>4.</td>
<td>Other Miscellaneous works</td>
<td></td>
</tr>
<tr>
<td>(a)</td>
<td>Supply and installation of IP-68 Male female connectors, 3-pin 10Amps.</td>
<td>50 Nos.</td>
</tr>
<tr>
<td>(b)</td>
<td>Removal of existing cabling/wiring</td>
<td>3000 m</td>
</tr>
<tr>
<td>(c)</td>
<td>Laying and termination of 4CX4/6sqmm. Cu cable</td>
<td>100 m</td>
</tr>
<tr>
<td>5.</td>
<td>Miscellaneous works related with completion and commissioning of power distribution system.</td>
<td>Lump sum</td>
</tr>
</tbody>
</table>

**Note to Bidders:** The offer will be evaluated on the basis of overall total cost including taxes, duties etc. for all the items mentioned above. If any one of the item is not considered by the bidder, the offer will be considered incomplete and hence rejected.

**General requirements:**

1. **Inspection & Testing:** The material will be checked and tested at supplier's premises, before dispatch to the site. Any material found defective during the course of inspection and testing shall be replaced with new item. The inspection and testing will be carried out at site after installation, by Engineer in-charge or his authorized representative.

2. The testing and inspection of the work carried out at site shall be checked for insulation resistance and earth connections. The testing of fixtures shall be carried out before and after installation for their electrical insulation resistance etc. The insulation tester and other tools required for the work will be brought by the contractor.

3. The responsibility for the safety of technician and labours lies with contractor. However, contractor shall follow the instruction issued by the Engineer in-charge with respect to the safety of personnel. The personnel working at height (more than
4) shall use the personnel protective equipments (PPE) such as helmet, safety belt etc. The tools and equipment brought by the contractors shall be taken care by the contractor themselves.

4). Contractor shall not damage any existing facilities/equipments etc. of the department, while working at site. The contractor is liable to compensate for any damage caused to existing facilities and systems while carrying out the work, where costly equipments are accommodated.

5). A supervisor from contractor's side should always accompany their labors and the permission may be sought from the concerned persons before entering into a particular room or area.

TERMS & CONDITIONS

1. The site visit is compulsory for assessment and evaluation of work involved, without that offer will be rejected.

2. The completion time period from the date of acceptance of purchase order/work order is to be stated in the offer.

3. The bidder should submit documents of similar experience of work related to the scope of work or similar work with respective completion certificate of the work.

4. Successful tenderer shall not sub-contract (sub-let) the work to any sub-contractor without written permission of the purchaser. In case subletting of any part of the work is permitted by the purchaser, if the permission has been accorded, then that should not establish any contractual relationship between sub-contractor and purchaser and shall not release the contractor from any of his obligation and liabilities under the applicable contract.

5. Successful tenderer shall clearly indicate the assumption made in respect of specifications, date or any other details that have not been mentioned in the tender documents but considered necessary for meeting the specified functional requirements

6. Bidders shall go through the technical specifications and provide in the offer point by point compliance. The technical deviations, (if any) shall be indicated clearly in the offer. Kindly note that no further communication will be made to get the technical clarifications. The offers without this information will be rejected without any consideration.

7. The cost evaluation of the offers will be carried out on the lot basis. Hence vendor shall consider all the expenses towards all items, taxes, loading, unloading, transportation, manpower boarding/looding, guarantee etc. while quoting. The individual/breakup cost is not required.

8. The contractor shall bring his own tools, tackles, ladders etc. required at site for installation work. Department will not provide any tool/tackles at site.

9. The electricity and water required at site (for very small tools/tackles like drilling/cutting machine) will be provided to the contractor at a single point, from where contractor have to make his own arrangement through extension boards etc. Prior to connection of electrical equipments contractor have obtain written clearance from Engineer in-charge.

10. The technician required to carry out the electrical work should be skilled and have requisite qualification/certificates. The documents are to be provided (in original) to engineer in-charge, before commencement of work at site. Unqualified/unskilled technician/workers will not be allowed to work at site.

11. All the safety precautions as per applicable code and practices shall be followed at site. The PPE shall strictly be used by workers while at site. The safety instructions issued by engineer in-charge shall be followed in all respect. The contractor will be responsible for any injury/accident occurring at site, due to any reason, department will not pay or liable for any compensation.

12. The site is restricted area and permission to the personnel coming inside the premises for installation work, require security clearances. Hence firm has to obtain Police Verification Certificates (PVC) from Police Commissioner Officer (not local police)/District Magistrate office, for all the persons coming inside the premises for work. The copy of PVCs shall be submitted along with offer. Otherwise offer will not be considered for evaluation

13. Firms who have not worked inside the DAE units (BARC/NPCIL) in past have to go through vetting procedure as prescribed by the Security Section of BARC

14. The entry passes for personnel coming inside premises are made by Security Section and require local residence proof (Mumbai/Thane) & identification proof along with PVC.