

BOQ for supply, receipt of material at Site, Unloading, Inspection, Verification , Storage, Up –keeping, Erection Testing & Commissioning (ETC) Works & handing over of illumination system for 765/400 KV Switchyard Medinipur & Jeerat s/s

Customer : POWERGRID Medinipur Jeerat Transmission Ltd

Project / Site : 765kV/400kV S/Stn at Medinipur & Jeerat

Rev-01

| Sl. No.  |        | Item Description                                                                                                                                                                            | Unit | Jeerat | Medinipur | Remarks    |
|----------|--------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------|--------|-----------|------------|
|          |        | <b>SUPPLY</b>                                                                                                                                                                               |      | (A)    | (B)       |            |
| <b>A</b> |        | <b>Illumination System: Outdoor Switchyard and Street Lighting at 765/400 kV S/S</b>                                                                                                        |      |        |           |            |
|          |        | <b>Lighting Panel.</b>                                                                                                                                                                      |      |        |           |            |
| 1        | Supply | Lighting Panel (Outdoor) Type ACP-2 as per technical specification.                                                                                                                         | Nos. | 12     | 15        |            |
| 2        | Supply | Lighting Panel (Outdoor) Type ACP-3 as per technical specification                                                                                                                          | Nos. | 5      | 5         |            |
| 3        | Supply | Sub-lighting panel (outdoor) Type SLP as per technical specification                                                                                                                        | Nos. | 12     | 15        |            |
|          |        | <b>Lighting fixtures and Receptacles</b>                                                                                                                                                    |      |        |           |            |
| 4        | Supply | LED Lighting Fixture Type-OHB as per technical specification                                                                                                                                | Nos. | 50     | 50        | Qty change |
| 5        | Supply | LED flood lighting fixtures- type " FL2" as per technical specification                                                                                                                     | Nos. | 140    | 190       | New item   |
| 6        | Supply | LED flood lighting fixtures- type " FL1" as per technical specification                                                                                                                     | Nos. | 10     | 10        | New item   |
| 7        | Supply | 63A, 415V : Interlocked switch socket outdoor Receptacle (Type RP) complete in all aspect except cable.                                                                                     | Nos. | 5      | 5         |            |
| 8        | Supply | 15A, 240V: Outdoor Receptacle 2 pole, 3-pin type (Type RO) complete in all aspect except cable.                                                                                             | Nos. | 5      | 5         |            |
| 9        | Supply | 4 m height Lighting pole                                                                                                                                                                    | Nos. | 8      | 8         |            |
| 10       | Supply | 3m , 20mm dia ms rod electrode                                                                                                                                                              | Nos. | 40     | 20        | Qty change |
| 11       | Supply | LED road Lighting Fixture type - 'S-LED' as per technical specification                                                                                                                     | Nos. | 8      | 8         | Qty change |
| 12       | Supply | Street lighting Fixture type " SL-L1"                                                                                                                                                       | Nos. | 40     | 20        | New item   |
| 13       | Supply | Street lighting Fixture type " SL-D1"                                                                                                                                                       | Nos. | 8      | 8         | New item   |
| 14       | Supply | Street lighting pole type "A1"                                                                                                                                                              | Nos. | 5      | 5         | New item   |
| 15       | Supply | Street lighting pole type "L1"                                                                                                                                                              | Nos. | 40     | 20        | New item   |
| 16       | Supply | Outdoor Power Receptacle for Oil Filtration Unit (250A)                                                                                                                                     | Nos. | 7      | 7         |            |
| <b>B</b> |        | <b>Illumination System: Indoor Systems</b>                                                                                                                                                  |      |        |           |            |
|          |        | <b>Lighting Panel.</b>                                                                                                                                                                      |      |        |           |            |
| 17       | Supply | Lighting Panel (Indoor) Type ACP-1 as per technical specification.                                                                                                                          | Nos. | 3      | 3         |            |
| 18       | Supply | Lighting Panel (Indoor) Type DCLP as per technical specification                                                                                                                            | Nos. | 2      | 2         |            |
|          |        | <b>Lighting fixtures and Receptacles</b>                                                                                                                                                    |      |        |           |            |
| 19       | Supply | 2X2 Luminair with high efficiency and low power consumption suitable for general office lighting,conference room and cabins application (LED) - Type 'I-LED1' suitable for recess mounting  | Nos. | 70     | 70        |            |
| 20       | Supply | 19 W, Recessed type LED Luminaries with high efficiency and low power consumption for passage, corridor and toilets area, Type-I-LED2'                                                      | Nos. | 10     | 10        |            |
| 21       | Supply | 2X2 Luminair with high efficiency and low power consumption suitable for general office lighting,conference room and cabins application (LED) - Type 'I-LED1' suitable for surface mounting | Nos. | 49     | 45        |            |
| 22       | Supply | LED based surface mounted downlighter, type SC-I                                                                                                                                            | Nos. | 70     | 70        |            |
| 23       | Supply | Bulkhead lighting fixture ; type -'IB'                                                                                                                                                      | Nos. | 5      | 5         |            |
| 24       | Supply | Bulkhead lighting fixture ; type -'IF'                                                                                                                                                      | Nos. | 15     | 15        |            |
| 25       | Supply | Exit Sign Board                                                                                                                                                                             | Nos. | 10     | 10        |            |
| 26       | Supply | DPMCB receptacles with 32A MCB for split AC supply                                                                                                                                          | Nos. | 15     | 15        |            |
| 27       | Supply | Air Conditioning Supply Panel with 160A TP MCCB incommer & 12 Nos 32A DP MCB outgoing feeders                                                                                               | Nos. | 2      | 2         |            |
| 28       | Supply | Occupancy sensors and other accessories as required for control of lighting in the stairs area and corridors of control room cum administrative building as per specification               | Lot  | 1      | 1         |            |
| 29       | Supply | Fire Fighting Pump House Building- LED based batten type luminaire with surface mounting bracket                                                                                            | nos. | 15     | 15        |            |
| 30       | Supply | LED based bulk head luminaire                                                                                                                                                               | nos. | 5      | 5         |            |
| 31       | Supply | 32 A TP receptacles with MCB (3 phase) for AC units                                                                                                                                         | Nos. | 10     | 12        |            |

BOQ for supply, receipt of material at Site, Unloading, Inspection, Verification , Storage, Up –keeping, Erection Testing & Commissioning (ETC) Works & handing over of illumination system for 765/400 KV Switchyard Medinipur & Jeerat s/s

Customer : POWERGRID Medinipur Jeerat Transmission Ltd

Project / Site : 765kV/400kV S/Stn at Medinipur & Jeerat

Rev-01

| Sl. No. |        | Item Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | Unit | Jeerat | Medinipur | Remarks                 |
|---------|--------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------|--------|-----------|-------------------------|
| 32      | Supply | Temperature Transducer - Each switch-yard panel room shall be provided with temperature transducer to monitor the temperature of the panel room. The Temperature transducer shall have the following specification:<br>Sensor : Air temperature sensor (indoor use)<br>Output : 4 to 20 mA<br>Temperature range : -5°C to 60°C<br>Resolution : 0.1 °C<br>Accuracy : 0.5 °C or better.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | Nos. | 10     | 10        |                         |
| 33      | Supply | Bulkhead lighting fixture for dc lighting, Type 'BH'                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | nos. | 7      | 7         |                         |
| 34      | Supply | 5A/15A receptacle Type RI                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | nos. | 14     | 14        |                         |
| 35      | Supply | 15A/240V Receptacle type RO (Industrial type)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | nos. | 13     | 13        |                         |
| 36      | Supply | 63A/415V Receptacle type RP (industrial type)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | nos. | 2      | 2         |                         |
| 37      | Supply | Telephone points- single outlet telephone socket including cable/wire and accessories                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | nos. | 10     | 10        | item description change |
| 38      | Supply | Telephone JB                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | Nos. | 1      | 1         |                         |
| 39      | Supply | LAN points including cable & accessories                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | Nos. | 5      | 5         | New item                |
| 40      | Supply | Switchboards as per Technical specification                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | Lot  | 1      | 1         |                         |
| 41      | Supply | MCB box for SPR                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | nos. | 8      | 7         |                         |
| 42      | Supply | 1400mm sweep Ceiling fan with electronic Step regulator                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | nos. | 15     | 15        |                         |
| 43      | Supply | 300 mm sweep Exhaust fans                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | nos. | 6      | 6         |                         |
| 44      | Supply | 400mm sweep wall mounted fan                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | nos. | 5      | 5         |                         |
|         |        | <b>Misc. Items</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |      |        |           |                         |
| 45      | Supply | Self supported aluminium ladder as per technical specification.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | Nos. | 1      | 1         |                         |
| 46      | Supply | Cartwheel mounted aluminium ladder as per technical specification                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | Nos. | 1      | 1         |                         |
|         |        | <b>Erection items</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |      |        |           |                         |
| 47      | Supply | <b>Erection items for indoor</b> like 3 way,G.I.,circular J.B.(20mm and 25mm),4 way,G.I.,circular J.B.(20mm and 25mm),90deg,G.I.,Inspection Bend(20mm and 25mm),90deg,G.I.,Normal Bend(20mm and 25mm),Heavy duty, Saddle with base(20mm and 25mm),Heavy duty, Saddle without base(20mm and 25mm),M4X25mm, steel screw with nut and washer,G.I. check nut/lock nut(20mm and 25mm),PVC Rawl plug,6mm,Wooden screw,35mm,Earth clip/clamp(20mm and 25mm),Cleat fabrication out of 25x6mm M.S. flat(for hanging conduit in false ceiling areas, Anchor fastner (M10x75mm for cleats,M12x75mm for lighting panels),Rubber bush(20mm and 25mm),20mm,PVC ,flexible conduit,20mm,PVC ,Coupling,Swing out bracket,20mm,Heavy duty,ball socket,Machine screw(for fixing surface mounting fixtures on circular J.B.), PVC closure(20mm and 25mm),Reducer (20mm and 25mm). GI conduits, epoxy coated conduits for corrosive areas , 1.5, 2.5 , 4 , 6 & 10 sq. mm wires, GI wire for earthing etc to complete | lot  | 1      | 1         | New item                |
| 48      | Supply | <b>Erection items for outdoor</b> like 20x1.5mm Aluminium flat, M12x40mm, G.I. Bolt with nut and washer for fixing outdoor lighting panels,M6x30mm, G.I. Bolt with nut and washer for fixing control gear boxes,M8x30mm, G.I. Bolt with nut and washer for fixing outdoor J.B.s,SLP, M10x35mm, G.I. Bolt with nut and washer for fixing outdoor lighting fixtures,G.I., 2.5 sqmm wire from STREET LIGHT POLE JB to fixture, Earth wire from J.B. to lighting fixtures,Mounting brackets for outdoor lighting fixtures, GI wire for earthing etc to complete                                                                                                                                                                                                                                                                                                                                                                                                                                     | lot  | 1      | 1         | New item                |
|         |        | <b>ERECTION TESTING AND COMMISSIONING</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |      |        |           |                         |
| C       |        | <b>Illumination System: Outdoor Switchyard and Street Lighting</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |      |        |           |                         |
|         |        | <b>Lighting Panel.</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |      |        |           |                         |
| 49      | ETC    | Lighting Panel (Outdoor) Type ACP-2 as per technical specification.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | Nos. | 12     | 15        |                         |
| 50      | ETC    | Lighting Panel (Outdoor) Type ACP-3 as per technical specification                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | Nos. | 5      | 5         |                         |

BOQ for supply, receipt of material at Site, Unloading, Inspection, Verification , Storage, Up –keeping, Erection Testing & Commissioning (ETC) Works & handing over of illumination system for 765/400 KV Switchyard Medinipur & Jeerat s/s

Customer : POWERGRID Medinipur Jeerat Transmission Ltd

Project / Site : 765kV/400kV S/Stn at Medinipur & Jeerat

Rev-01

| Sl. No. |     | Item Description                                                                                                                                                                                                                                                                                                                                                                     | Unit | Jeerat | Medinipur | Remarks    |
|---------|-----|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------|--------|-----------|------------|
| 51      | ETC | Sub-lighting panel (outdoor) Type SLP as per technical specification                                                                                                                                                                                                                                                                                                                 | Nos. | 12     | 15        |            |
|         |     | <b>Lighting fixtures and Receptacles</b>                                                                                                                                                                                                                                                                                                                                             |      |        |           |            |
| 52      | ETC | LED Lighting Fixture <b>Type-OHB</b> as per technical specification                                                                                                                                                                                                                                                                                                                  | Nos. | 50     | 50        | Qty change |
| 53      | ETC | LED flood lighting fixtures- <b>type " FL2"</b> as per technical specification                                                                                                                                                                                                                                                                                                       | Nos. | 140    | 190       | New item   |
| 54      | ETC | LED flood lighting fixtures- <b>type " FL1"</b> as per technical specification                                                                                                                                                                                                                                                                                                       | Nos. | 10     | 10        | New item   |
| 55      | ETC | 63A, 415V : Interlocked switch socket outdoor Receptacle ( <b>Type RP</b> ) complete in all aspect except cable.                                                                                                                                                                                                                                                                     | Nos. | 5      | 5         |            |
| 56      | ETC | 15A, 240V: Outdoor Receptacle 2 pole, 3-pin type ( <b>Type RO</b> ) complete in all aspect except cable.                                                                                                                                                                                                                                                                             | Nos. | 5      | 5         |            |
| 57      | ETC | 4 m height Lighting pole                                                                                                                                                                                                                                                                                                                                                             | Nos. | 8      | 8         |            |
| 58      | ETC | 3m , 20mm dia ms rod electrode                                                                                                                                                                                                                                                                                                                                                       | Nos. | 40     | 20        | Qty change |
| 59      | ETC | LED road Lighting Fixture type - 'S-LED' as per technical specification                                                                                                                                                                                                                                                                                                              | Nos. | 8      | 8         | Qty change |
| 60      | ETC | Street lighting Fixture type " SL-L1"                                                                                                                                                                                                                                                                                                                                                | Nos. | 40     | 20        | New item   |
| 61      | ETC | Street lighting Fixture type " SL-D1"                                                                                                                                                                                                                                                                                                                                                | Nos. | 8      | 8         | New item   |
| 62      | ETC | Street lighting pole type "A1"                                                                                                                                                                                                                                                                                                                                                       | Nos. | 5      | 5         | New item   |
| 63      | ETC | Street lighting pole type "L1"                                                                                                                                                                                                                                                                                                                                                       | Nos. | 40     | 20        | New item   |
| 64      | ETC | Outdoor Power Receptacle for Oil Filtration Unit (250A)                                                                                                                                                                                                                                                                                                                              | Nos. | 7      | 7         |            |
|         |     | <b>Illumination System: Indoor Systems</b>                                                                                                                                                                                                                                                                                                                                           |      |        |           |            |
|         |     | <b>Lighting Panel.</b>                                                                                                                                                                                                                                                                                                                                                               |      |        |           |            |
| 65      | ETC | Lighting Panel (Indoor) Type ACP-1 as per technical specification.                                                                                                                                                                                                                                                                                                                   | Nos. | 3      | 3         |            |
| 66      | ETC | Lighting Panel (Indoor) Type DCLP as per technical specification                                                                                                                                                                                                                                                                                                                     | Nos. | 2      | 2         |            |
|         |     | <b>Lighting fixtures and Receptacles</b>                                                                                                                                                                                                                                                                                                                                             |      |        |           |            |
| 67      | ETC | 2X2 Luminair with high efficiency and low power consumption suitable for general office lighting,conference room and cabins application (LED) - <b>Type 'I-LED1' suitable for recess mounting</b>                                                                                                                                                                                    | Nos. | 70     | 70        |            |
| 68      | ETC | 19 W, Recessed type LED Luminaries with high efficiency and low power consumption for passage, corridor and toilets area, <b>Type-I-LED2'</b>                                                                                                                                                                                                                                        | Nos. | 10     | 10        |            |
| 69      | ETC | 2X2 Luminair with high efficiency and low power consumption suitable for general office lighting,conference room and cabins application (LED) - <b>Type 'I-LED1' suitable for surface mounting</b>                                                                                                                                                                                   | Nos. | 49     | 45        |            |
| 70      | ETC | LED based surface mounted downlighter, <b>type SC-I</b>                                                                                                                                                                                                                                                                                                                              | Nos. | 70     | 70        |            |
| 71      | ETC | Bulkhead lighting fixture ; <b>type -'IB'</b>                                                                                                                                                                                                                                                                                                                                        | Nos. | 5      | 5         |            |
| 72      | ETC | Bulkhead lighting fixture ; <b>type -'IF'</b>                                                                                                                                                                                                                                                                                                                                        | Nos. | 15     | 15        |            |
| 73      | ETC | Exit Sign Board                                                                                                                                                                                                                                                                                                                                                                      | Nos. | 10     | 10        |            |
| 74      | ETC | DPMCB receptacles with 32A MCB for split AC supply                                                                                                                                                                                                                                                                                                                                   | Nos. | 15     | 15        |            |
| 75      | ETC | Air Conditioning Supply Panel with 160A TP MCCB incommer & 12 Nos 32A DP MCB outgoing feeders                                                                                                                                                                                                                                                                                        | Nos. | 2      | 2         |            |
| 76      | ETC | Occupancy sensors and other accessories as required for control of lighting in the stairs area and corridors of control room cum administrative building as per specification                                                                                                                                                                                                        | Lot  | 1      | 1         |            |
| 77      | ETC | Fire Fighting Pump House Building- LED based batten type luminaire with surface mounting bracket                                                                                                                                                                                                                                                                                     | nos. | 15     | 15        |            |
| 78      | ETC | LED based bulk head luminaire                                                                                                                                                                                                                                                                                                                                                        | nos. | 5      | 5         |            |
| 79      | ETC | 32 A TP receptacles with MCB (3 phase) for AC units                                                                                                                                                                                                                                                                                                                                  | Nos. | 12     | 10        |            |
| 80      | ETC | Temperature Transducer - Each switch-yard panel room shall be provided with temperature transducer to monitor the temperature of the panel room. The Temperature transducer shall have the following specification:<br>Sensor : Air temperature sensor (indoor use)<br>Output : 4 to 20mA<br>Temperature range : -5°C to 60°C<br>Resolution : 0.1 °C<br>Accuracy : 0.5 °C or better. | Nos. | 6      | 10        |            |
| 81      | ETC | Bulkhead lighting fixture for dc lighting, <b>Type 'BH'</b>                                                                                                                                                                                                                                                                                                                          | nos. | 7      | 7         |            |
| 82      | ETC | 5A/15A receptacle <b>Type RI</b>                                                                                                                                                                                                                                                                                                                                                     | nos. | 14     | 14        |            |
| 83      | ETC | 15A/240V Receptacle <b>type RO</b> (Industrial type)                                                                                                                                                                                                                                                                                                                                 | nos. | 13     | 13        |            |

BOQ for supply, receipt of material at Site, Unloading, Inspection, Verification , Storage, Up –keeping, Erection Testing & Commissioning (ETC) Works & handing over of illumination system for 765/400 KV Switchyard Medinipur & Jeerat s/s

Customer : POWERGRID Medinipur Jeerat Transmission Ltd

Project / Site : 765kV/400kV S/Stn at Medinipur & Jeerat

Rev-01

| Sl. No. |     | Item Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | Unit | Jeerat | Medinipur | Remarks                 |
|---------|-----|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------|--------|-----------|-------------------------|
| 84      | ETC | 63A/415V Receptacle type RP (industrial type)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | nos. | 2      | 2         |                         |
| 85      | ETC | Telephone points- single outlet telephone socket including cable/wire and accessories                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | nos. | 10     | 10        | item description change |
| 86      | ETC | Telephone JB                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | Nos. | 1      | 1         |                         |
| 87      | ETC | LAN points incuding cable & accessories                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | Nos. | 5      | 5         | New item                |
| 88      | ETC | Switchboards as per Technical specification                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | Lot  | 1      | 1         |                         |
| 89      | ETC | MCB box for SPR                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | nos. | 8      | 7         |                         |
| 90      | ETC | 1400mm sweep Ceiling fan with electronic Step regulator                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | nos. | 15     | 15        |                         |
| 91      | ETC | 300 mm sweep Exhaust fans                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | nos. | 6      | 6         |                         |
| 92      | ETC | 400mm sweep wall mounted fan                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | nos. | 5      | 5         |                         |
| 93      | ETC | <b>Erection items for indoor (Control room building , Aux building, FFPH building ,SPR)</b> like 3 way,G.I.,circular J.B.(20mm and 25mm),4 way,G.I.,circular J.B.(20mm and 25mm),90deg,G.I.,Inspection Bend(20mm and 25mm),90deg,G.I.,Normal Bend(20mm and 25mm),Heavy duty, Saddle with base(20mm and 25mm),Heavy duty, Saddle without base(20mm and 25mm),M4X25mm, steel screw with nut and washer,G.I. check nut/lock nut(20mm and 25mm),PVC Rawl plug,6mm,Wooden screw,35mm,Earth clip/clamp(20mm and 25mm),Cleat fabrication out of 25x6mm M.S. flat(for hanging conduit in false ceiling areas, Anchor fastner (M10x75mm for cleats,M12x75mm for lighting panels),Rubber bush(20mm and 25mm),20mm,PVC ,flexible conduit,20mm,PVC ,Coupling,Swing out braket,20mm,Heavy duty,ball socket,Machine screw(for fixing surface mounting fixtures on circular J.B.), PVC closure(20mm and 25mm),Reducer (20mm and 25mm). GI conduits, epoxy coated conduits for corrosive areas , 1.5, 2.5 , 4 , 6 & 10 sq. mm wires, GI wire for earthing etc to complete | lot  | 1      | 1         | New item                |
| 94      | ETC | <b>Erection items for outdoor</b> like 20x1.5mm Aluminium flat, M12x40mm, G.I. Bolt with nut and washer for fixing outdoor lighting panels,M6x30mm, G.I. Bolt with nut and washer for fixing control gear boxes,M8x30mm, G.I. Bolt with nut and washer for fixing outdoor J.B.s,SLP, M10x35mm, G.I. Bolt with nut and washer for fixing outdoor lighting fixtures,G.I., 2.5 sqmm wire from STREET LIGHT POLE JB to fixture, Earth wire from J.B. to lighting fixtures,Mounting brackets for outdoor lighting fixtures, GI wire for earthing etc to complete                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | lot  | 1      | 1         | New item                |
| E       |     | <b>Illumination System: Outdoor cabling</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |      |        |           |                         |
|         |     | Cable Laying - Cabling including laying, tagging , dressing, ferruling, lugging, installation of cable gland ,soldering, tapping, jointing, crimping, termination, and drilling/ cutting holes in cable gland plates- laying can be either on trays, supports, underground, buried in ground or through GI/PVC pipe over/under ground, through wall, on LM/ tower etc. All erection materials viz. ferrules, copper lugs, cable glands , cable ties / straps, Al. tags, markers, GI / PVC wall sleeves with rubber / nylon bushes and flexible steel conduits shall be supplied by bidder.                                                                                                                                                                                                                                                                                                                                                                                                                                                                |      |        |           |                         |
| 95      | ETC | 2 Core X 2.5 Sq mm Cu. cable                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | Km   | 1.5    | 7.5       |                         |
| 96      | ETC | 4 Core X 16 Sq mm Al. cable                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | Km   | 6      | 7.5       |                         |
| 97      | ETC | Directly burried cable - 4 Core X 16 Sq mm cables along with lugs, cable glands to be laid in burried trench , all civil activities such as excavation, supply and laying of sand, bricks etc. shall be in contractor's scope. Cable glands to be supplied by bidder.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | Km   | 1      | 1         |                         |

BOQ for supply, receipt of material at Site, Unloading, Inspection, Verification , Storage, Up –keeping, Erection Testing & Commissioning (ETC) Works & handing over of illumination system for 765/400 KV Switchyard Medinipur & Jeerat s/s

Customer : POWERGRID Medinipur Jeerat Transmission Ltd

Project / Site : 765kV/400kV S/Stn at Medinipur & Jeerat

Rev-01

| Sl. No. |     | Item Description                                                                                                                                                                                                                                                | Unit | Jeerat | Medinipur | Remarks |
|---------|-----|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------|--------|-----------|---------|
|         |     | GS strip including cutting, bending, welding with 40 mm dia MS rod riser/earth strip, applying zinc rich paint, clamping to structure/building wall etc. to complete. Hardware required for connecting flat on pads of structure & equipment included in scope. |      |        |           |         |
| 98      | ETC | 50 x 6 mm GI Flat                                                                                                                                                                                                                                               | kM   | 0.5    | 0.5       |         |

**Remark -1:** The above quantities (BOQ) are as per preliminary design only. The detail design will be submitted by Vendor and subject to approval by Customer. The BOQ quantities which are finalised after approval has to be supplied. BHEL reserves the right for quantity variation due to any reason upto  $\pm 30\%$  of total value at same unit rate and terms during execution of contract . The quantity of individual items may however vary upto any extent

**Remark-2:** Supply of cable glands included in the erection item for cabling.

**Remark -3:** If extra items required for completion of Job but not covered above, shall be quoted separately as a list of items and same shall be submitted with the bid ( price of supply and ETC to be quoted on Lumpsum basis).