

BHEL::HYDERABAD

M&S – P&C DEPARTMENT

TENDER No.M&S/P&C/2019/11 DT.22/04/2019

NAME OF WORK:HT and LT Works for 10MW ONGC COMPRESSOR TESTING.

SCOPE OF WORK

The works are to be carried out in accordance with IE rules 1956. After completion of erection works, the contractor has to arrange inspection by **Central Electricity Authority** and obtain the permission for charging the sub-station.

1. BHEL will provide all relevant drawings and other necessary arrangements are to be borne by the contractor.
2. The quantities indicated are tentative and may increase or decrease.
3. Any other works not mentioned but required for completion of the project are to be carried out by the contractor.
4. The contractor should follow all the statutory requirements, Environmental Management System (EMS), Occupation Health and Safety Management System (OHSAS) while executing the work.

S. No	Work Description
1	Shifting, Assembly, Erection, Testing and Commissioning of 6.6KV, VM-12, BHEL make, Indoor type stand-alone VCBs. The VCBs shall be erected on the trenches by providing MS material. The job includes primary injection, secondary injection and testing of relays mounted on VCB panels. Approx. Size: 820(L) x 2355(W) x 2700(H) mm and Wt.: 1500 kgs each.
2	Shifting, testing and commissioning of 11KV, 1250A VCB truck. The job includes cleaning, applying grease to the contacts, etc.
3	Shifting, Assembly, Erection, Testing & Commissioning of 16MVA, 11/6.6KV, outdoor, oil immersed, power transformer. The transformer shall be placed on foundation with MS Channel. The transformer is to be shifted with in the factory from storage location to the site. The job includes oil filling, filtration, BDV test, all protection checks etc. as per IS: 2026. The approximate weight with oil is 52T and dimensions are 7500 x 10000 x 7000 mm & Oil Qty: 6000 litres. Oil drain shall be connected to soak pit with free issued MS pipe & flange.
4	Shifting, Assembly and Erection of soft starter panel for 12MW Compressor. The approximate weight is 3.0T and dimensions are 3000(L) x 1500(W) x 2500(H)mm.
5	Shifting, Assembly, Erection, Testing & Commissioning of 6.6KV, 1600A Isolator. The approximate weight is
6	Shifting and laying of the following HT power cables (UE). The job includes Dressing & Tagging, Fixing of free issued trefoil clamps for Single Core cable at 1 m interval etc.
	i) 1C X 630 sq.mm, 11kV(UE), XLPE Aluminium cable
	ii) 1C X 630 sq.mm, 6.6kV(UE), XLPE Aluminium cable
7	iii) 1C X 500 sq.mm, 6.6kV(UE), Copper flexible cable
	Execution of BHEL-free issued end joints and reconnection of the following cables in the VCBs/transformer. The job includes making holes of sufficient size in the gland plates, adjusting the cables in the trench, relaying and adjustment of cable for up to 5 metres and providing mechanical support for the cables, sealing of cable entries with wall putty, tagging of cables. Supply of wall putty and cable tags are in contractor's scope. The tools required for the work are in contractor's scope.
	i) 1C X 630 sq.mm, 11kV(UE), XLPE Aluminium cable
	ii) 1C X 630 sq.mm, 6.6kV(UE), XLPE Aluminium cable
iii) 1C X 500 sq.mm, 6.6kV(UE), Copper flexible cable	

8	Supply and Erection of Earth pits for Equipment body earthing with 65 mm dia GI pipe Medium (class-B), strictly as per IS: 3043, 3000 mm long with holes of 12 mm dia at 150 mm apart at random & 50x6x260mm MS Earthing plate welded to pipe as per drawing. The work includes supply of material for alternate layers of charcoal (75kgs), salt (150kgs) and making RCC/brick chambers with MS/cast iron cover. Contractor shall dig 300 mm depth and 200 mm width trench in the soil for laying the earth flat from earth pit electrode to earth mat/equipment.
9	Shifting, Fabrication and Erection of BHEL free issued structural steel for equipment/cable tray support
10	Shifting & Earthing of Equipment from nearest Earth riser with 50x6mm/ 25x3mm GI flat
11	Shifting & Erection of cable tray up to 600 mm width of ladder / perforated type. The job includes fabrication of cable tray bends wherever required.
12	Supply and laying of Electrical Insulated Rubber Floor Mats, size: 1000x2000x2.5 mm, 11KV, Class B for placing in front of HT & LT Switch Gear Panels conforming to IS:15652/1969. Insulation Resistance: 10,000MOHMS (minimum). Breakdown Test: 50kV (minimum) as per IS: 2584/1963.
13	Shifting and laying of the following LT cable
	a) 3C/4C X 2.5 sq.mm Copper armoured cable
	b) 12C X 1.5 sq.mm Copper armored cable
	c) 4C X 16 sq.mm Aluminium armoured cable
14	Termination of the following LT cable. Copper/Aluminium lug, glands and other items are in the scope of contractor
	a) 3C/4C X 2.5 sq.mm Copper armored cable
	b) 12C X 1.5 sq.mm Copper armored cable. The gland should be of double compression type and make of the gland: Dowells/Comet/Polycab
	c) 4C X 16 sq.mm Aluminium armoured cable. The gland should be of double compression type and make of the gland: Dowells/Comet/Polycab
15	Supply, Assembly, Erection, Testing & Commissioning of 2X18W LED T5 Tube Lights. The job includes supply of 1.5sq.mm copper wire for connection from ceiling to fitting. Make: Syska/Goldwyn/Bajaj/Wipro/FortuneArt/Havells
16	Supply and execution of concealed / surface PVC/MS Pipe wiring with 1.5 sq. mm 660 / 1100. V. Grad PVC insulated copper wire multi strand of make Finolex/Rediant/Finecab/Havells/L&T . In PVC pipe of 1" dia (As per IS: 743 for wiring points) with 14 G/1.5 sq.mm green colour copper wire for earth continuity. Each light / fan point should be connected with MCBDB through control SP switch to three plate ceiling rose code 39072 of Roma modular type of Anchor or North West make / connector suspended duly with conduit / PVC pipe etc. Each circuit should not have more than 7 points 700 watts.
17	Supply and fixing of 10 Amps 250 V. SP switches for control of light fitting and fans with Roma Type code : 21011 of Anchor or North West make . Fixed on a suitable modular type concealed box with suitable top cover. Testing & commissioning.
18	Supply and fixing of 3pin, 250 V. 10 Amps power socket cum switch with indication Roma type code 21113 and 21033 of Anchor make or North West. Fixed on suitable modular type concealed box top cover. Testing & commissioning.

19	Supply and Installation of MCB DB with SPN Single Door Distribution Board consisting of 10 to 20A -- 8nos MCBs on each phase with double door metallic cover having transparent window, sheet enclosed, dust & vermin proof. Ref No: 8GB32201RC04 of SIEMENS/Ref No: NSYN8690TPNWD04 of ABB make along with controlling I/C 4P, 32A MCB along with 13-way neutral links and 13-way earth link. It is to be concealed in the wall or as per the site engineer's instructions. The job includes labelling / writing the connection chart inside the door with WHITE duco paint as required, double earthing, testing & commissioning.
20	Supply, shifting, fixing, testing and commissioning of 230V, 1400mm sweep ceiling fans (make: Orient/Bajaj/Crompton Greaves, model: Topaz Gold/equivalent). The job includes supply and fixing of Anchor fastner with fan hook / Providing MS Fan hook with grouting and cement plastering, fan regulator of make: Anchor, type: Fan Step Regulator Tiny EME 100W , code: 22546 , along with suitable modular cover plate and GI/PVC boxes and supply of 3C X 1.5 sq.mm copper cable for connecting from ceiling rose to the fan.
21	Supply, shifting, installation, testing and commissioning of 80W LED lights for periphery lighting. 42mm GI pipe will be issued free of cost by BHEL. Make: Syska/Goldwyn/Bajaj/Wipro/FortuneArt/Havells
22	Excavation of 1000mm deep and 500mm width trench, supply & spreading of sand, supply & laying of bricks & shabad stone as per IS:1255 1983 and back filling after laying the cable with marking plates. Existing HT cables may be lying in the route. Hence, Contractor has to take additional safety precautions.