

ANNEXURE-A

OFFICE:- 25, Mohammedi Lakda Bazar,
No. 1, M. Shaokatali Road, Mumbai - 400 008.
PH: 022 - 26610081/82/83/84



Mika Engineers

WORKS:-

At post Aghai, Shed No. 2,
Jilla: Shahpur, Dist.: Thane.
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CONTROL PANEL BUILDERS & LICENSED
ELECTRICAL CONTRACTORS

E-mail: - mika@mtnl.net.in
Website: www.mikaengineers.com

Dtd: 03.11.09

rev 00

BILL OF MATERIAL FOR 220/132 SWITCHYARD

P.O.NO: 4588439 DTD 06.01.2009

Sl. No.	DESCRIPTION	Unit	Qty	MAKE
(1)	(2)	(3)	(4)	(5)
I	220/132kV PITHORAGARH (NEW) (POWERGRID) SUBSTATION			
	SUPPLY of Illumination System			
1.1	Control Room cum administrative office building			
1.1.1	Lighting Panel			
	i) INDOOR			
	415V AC lighting panel, 63 A 3 phase 4 wire bus and one number 63 amp TPN MCB with neutral unit as incomer and 20A, MCB as outgoing feeders. Type ACP-1 with 8 nos outgoing 20Amps SPMCB feeders	Nos	3	MIKA
	ii) 220V DC indoor type change over board and 220V DC 32A two wire bus and one 32A contractor backed up by 32A double pole MCB as incomer. The panel shall have local push button controls. Following are the various types of panels required with control timer. Type DCP with 6 nos. - 16A DP MCB units	No.	1	MIKA
1.1.2	Lighting fixtures and Receptacles			
(i)	Lighting Fixtures (As per technical specifications)			
	(a) 2x36W flourescent lamps in industrial reflector type fixture. complete with accessories and suitable for pendent Mounting, CGL Cat No. IGPI324HSB + RVE 24 (Type FI)	Nos	34	CGL
	(b) 1x11 W CFL Lamp emergency light with Battery operated portable fixture with built in chargeable Batteries and battery charger suitable for a lighting period of six hours similar to M/s BPL make (Type PF)	Nos	4	BPL
	(c) 2x36W flourescent lamp in corrosion proof fixture consisting of a canopy made of fibre glass reinforced polyester(FRP) with gasket a gear tray made of sheet steel and a reeded acrylic cover fixed by toggle clips CGL Cat. No. IPFC1124 HSB (Type FC)	Nos	6	CGL
	(d) 60/100W GLS lamp in Bulkhead fixtures with Cast Aluminium alloy body, suitable for column, wall, and ceiling mounting finished stove enameled silver grey outside white inside, to be supplied complete (with front glass, wire guard, tropicalised, gasket and E.S. Porcelain, lamp holder taped 3/4" E.T. for conduit entry) CGL IBH1110/ BC (Type IF)	Nos	10	CGL

BILL OF MATERIAL FOR PITHORAGARH ILLUMINATION

Santosh Kumar
04.11.09

Santosh Kumar
Dy. Mgr. TBEM
BHE

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	(e) 9W CFL lamp in Bulkhead fixtures with Cast Aluminium alloy body, suitable for column, wall, and ceiling mounting finished stove enamelled silver grey outside white inside, to be supplied complete (with front cover, wire guard, tropicalised, gasket and lamp holder taped 3/4" E.T. for conduit entry)CGL ICBH10--(Type IB)	Nos	8	
				CGL
(ii)	Receptacles			
	(a)5/15A, 240V: indoor Receptacle 3-pin type (Type RI)	Nos	41	ANCHOR/ROMA
	(b)16A, 240V: outdoor Receptacle 2 pole, 3-pin type (Type RO)	Nos	4	MIKA
	(c)63A, 415V: Interlocked switch socket outdoor Receptacle (Type RP)	Nos	2	MIKA
1.1.3	Conduits & Wires			
	(i) Galvanised Rigid Steel Conduits of following sizes alongwith the accessories:			
	(a)19 mm	Mtr	1000	BEC
	(b)25 mm	Mtr	2100	BEC
	(c)32 mm	Mtr	200	BEC
	(d)40 mm	Mtr	50	BEC
	(ii) 19 mm PVC conduit for telephone wiring	Mtr	400	PRECISE ON
	(iii) PVC insulated Stranded Copper / Aluminium wire of following sizes :			
	(a)1x1.5 sq mm (Cu)	Mtr	3250	polycab
	(b)1x2.5 sq mm (Cu)	Mtr	8300	polycab
	(c)1x4 sq mm (Cu)	Mtr	5270	polycab
1.1.4	Switchboards			
	(i) Modular switchboard with 4 nos. 5 Amp. Switches and 1 no. 5/15 Amp. Receptacle	Nos	21	ANCHOR/ROMA
	(ii) Modular switchboard with 6 nos. 5 Amp. Switches	Nos	2	ANCHOR/ROMA
	(iii) Modular switchboard with 2 nos. 5 Amp. Switches	Nos	15	ANCHOR/ROMA

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1.1.5	Conduits / Wire for Telephone			
	(i) Telephone cables, armoured, annealed tinned copper conductor and petroleum jelly filled with polyethylene outer jackets.			
	(a) 20 pair cables	Mtr	250	POLYCARB
	(ii) Telephone junction boxes			
	(a) 20 pair telephone junction box	Nos	4	KRONF
	(iii) Telephone sockets			
	(a) Single socket outlet comprising RJ - 45 socket	Nos	8	ANCHOR/ ROMA
	(b) Dual socket outlet comprising RJ - 45 socket	Nos	23	ANCHOR/ ROMA
1.1.6	Junction Boxes with 4 nos. of terminal blocks	Nos	--	--
1.1.7	Lighting transformer 100KVA, 415/415, 3 phase, 50 HZ dry type as per technical specification	Nos	3	INDCON
1.1.8	Exhaust fans Cat ref Cross Air	Nos	5	CGI
1.1.9	Maintenance Equipment as per Clause 2.11			
1.1.9.1	A type Aluminium ladder of 3 meter vertical height	No	1	ALLIED
1.1.9.2	Cartwheel mounted Aluminium ladder vertical height 7.5 meters	No	1	ALLIED

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1.2	Switchyard Lighting			
1.2.1	Lighting Fixtures (As per technical specifications)			
	a) 2 X 400 HPSV lamps in high Flood lighting fixture suitable for outdoor mounting with aluminium enclosure: CGL Cat No. FHD1424 (Type SF2) with mounting arrangement	Nos	16	CGL
	b) 2 x 250W HPSV lamps in high Flood lighting fixture suitable for outdoor mounting with aluminium enclosure: CGL Cat No. FHD1424 (Type SF2) with mounting arrangement	Nos	27	CGL
	c) 1x 250W HP sodium vapour lamps in high flood lighting fixture suitable for outdoor mounting with Aluminium enclosure and integral control gear: CGL Cat. No. FAD1314 (Type SF3) with mounting arrangement	Nos	10	CGL
1.2.2	Outdoor Junction Box	No.	6	MIKA
1.2.3	Outdoor Lighting Panel			
	415V AC lighting panel, 63 A 3 phase 4 wire bus and one number 63 amp TPN MCB with neutral unit as incomer and 20A, MCB as outgoing feeders.	No.	6	MIKA
	Type ACP-2 with 8 nos.-20 A single pole MCB and 1 No. 20 A Tripple pole MCB with Neutral and suitable timer and contactor for automatic switching			
1.2.4	Sub Lighting Panel	No.	13	MIKA
1.2.5	16A, 240V: outdoor Receptacle 2 pole, 3-pin type (Type RO)	Nos	4	MIKA
1.2.6	63A, 415V: Interlocked switch socket outdoor Receptacle (Type RP)	Nos	2	MIKA
1.3	MANDATORY SPARES (5% OF EACH TYPE OF LIGHTING FIXTURE SUPPLIED)	LOT	1	
	(a) 2x36W flourescent lamps in industrial reflector type fixture, complete with accessories and suitable for pendent Mounting, CGL Cat No. IGP1324HSB + RVE 24 (Type FI)	Nos	2	CGL
	(b) 100W GLS lamp in Bulkhead fixtures with Cast Aluminium alloy body, suitable for column, wall, and ceiling mounting finished stove enameled silver grey outside white inside, to be supplied complete (with front glass, wire guard, tropicalised, gasket and E.S. Porcelain, lamp holder taped 3/4" E.T. for conduit entry) CGL IBH1110/ BC (Type IF)	Nos	1	CGL
	(c) 2x36W flourescent lamp in corrosion proof fixture consisting of a canopy made of fibre glass reinforced polyester(FRP) with gasket a gear tray made of sheet steel and a reeded acrylic cover fixed by toggle clips CGL Cat. No. IPFC1124 HSB (Type FC)	Nos	1	CGL

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	(d) 9W CFL lamp in Bulkhead fixtures with Cast Aluminium alloy body, suitable for column, wall, and ceiling mounting finished stove enamelled silver grey outside white inside, to be supplied complete (with front cover, wire guard, tropicalised, gasket and lamp holder taped 3/4" E.T. for conduit entry) CGL ICBH10--(Type IB)	Nos	1	
	e) 2 x 250W HP Sodium vapour lamps in high Flood lighting fixture suitable for outdoor mounting with aluminium enclosure: CGL Cat No. FHD1424 (Type SF2) with mounting arrangement	Nos	3	CGL
	f) 1x 250W HP sodium vapour lamps in high flood lighting fixture suitable for outdoor mounting with Aluminium enclosure and integral control gear: CGL Cat. No. FAD1314 (Type SF3) with mounting arrangement	Nos	1	CGL
1.4	Illumination Erection Material for Indoor works: 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)	LOT	1	
1.5	Illumination Erection Material for Outdoor works: 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., Earthwire, from J.B. to lighting fixtures, Mounting brackets for lighting fixtures for 2x400W fixtures, 1x400W fixtures	LOT	1	

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24.11.09

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BILL OF QUANTITY FOR BILLING PURPOSE

LOA No. C-13302-S919A-3/LOA-I/1898 dated 3.1.2006

NAME OF THE PROJECT: 220/132KV SWITCHYARD AT PITHORAGARH PGCL**P.O. NO.339P291 DATED 01.10.09****SUPPLIER: M/S AVAIDS TECHNOVATORS PVT LTD. , NEW DELHI**

Sl. No.	Description	Units	Quantity
1.	ILLUMINATION EQUIPMENT 220V CROMPTON WALL MOUNTED FAN	Nos.	5
2.	ILLUMINATION EQUIPMENT 220V ANCHOR MAKE FAN BOX WITH 6 REGULATOR AND 6 SWITCHES	NOS.	5
3.	ILLUMINATION EQUIPMENT 220V CROMPTON FITTING CRFA24HSB	Nos.	
4.	ILLUMINATION EQUIPMENT 220V CROMPTON 1400MM CEILING FAN	Nos.	18


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