

TENDER SPECIFICATION

NO.BHE/PW/PUR/ MSWRH-CLE/624

Handling at Site Stores/storage Yard, Transportation from stores/storage to site of Work, calibration testing and commissioning of Electrical and Control & Instrumentation works for Unit 1 to unit 5 of 10X40MW

SHREE MAHESHWAR HYDRO POWER CORPORATION LTD.

MAHESHWAR

Distt. KHARGONE (MADHYA PRADESH)

PART II - PRICE BID

(REVISION – 01 DATED 23/03/2009)



BHARAT HEAVY ELECTRICALS LIMITED

(A Govt. of India Undertaking)

POWER SECTOR - WESTERN REGION

345, KINGS WAY - NAGPUR 440 001

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EARNEST MONEY DEPOSIT: Please see Special Conditions of Contract.

LAST DATE FOR TENDER SUBMISSION: Please obtain updated information from web page "<http://www.bhel.com>" → Tender Notifications → View Corrigendums.

THESE TENDER SPECIFICATION DOCUMENTS CONTAINING **PART-I** AND **PART- II** ARE ISSUED TO:

M/s.

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PLEASE NOTE:
THESE TENDER SPECS DOCUMENTS ARE NOT TRANSFERABLE.

For Bharat Heavy Electricals Limited

Dy. General Manager (Purchase)

Place: Nagpur

Date:

BHARAT HEAVY ELECTRICALS LIMITED: PSWR: Nagpur
T.S. No. BHE/PW/PUR/ MSWRH-CLE/624
Price Bid (REVISION -01 Dated 23/03/2009) (Page 1 of 1)

NAME OF THE WORK: Handling at Site Stores/storage Yard, Transportation from stores/storage to site of Work, calibration testing and commissioning of Electrical and Control & Instrumentation works for Unit 1 to unit 5 of 10X40MW SHREE MAHESHWAR HYDRO POWER CORPORATION LTD.MAHESHWAR Distt. KHARGONE (MADHYA PRADESH

Description of Work	TOTAL LUMP SUM AMOUNT	
	In Figures (in Rupees)	In Words (in Rupees)
Scope of work as specified in T.S.No BHE/PW/PUR/ MSWRH-CLE/624 AND BOQ attached as part of Price Bid .		

Note:

1. Amount quoted shall be considered as the total lumpsum amount for the complete BOQ as given in Part-II: Price Bid.
2. Individual item rates shall be in proportion to the weightages specified in the BOQ.
3. Refer Clause 11.6.0 of tender specification for variation in quantity.

DATE

SIGNATURE & OFFICIAL SEAL OF BIDDER

BHARAT HEAVY ELECTRICALS LIMITED
PSWR - NAGPUR
BILL OF QUANTITIES
T.S. No. BHE/PW/PUR/MSWRH-CLE/624
(REVISION - 01 Dated 23/03/2009)

SHREE MAHESHWAR HYDRO POWER CORPORATION LTD, 10X40 MW, UNIT 1 - 5				
Sl. No.	DESCRIPTION OF WORK	UOM	QTY	Weightages
AA	PANELS			
1	STATIC EXCITATION EQUIPMENT			
1.1	Regulation & Field Flash Cubicle , Dimension & wt.of Each Panel-1150(W) x 1200 (D) x 2295 (H) & 1.3 MT(Approx). (01no per set), Field suppression , Dimension & wt.of Each Panel-1150 (W) x 1200(D) x 2295 (H) mm, 3.0MT(Approx.), (01 no. per set), Thyristor , Dimension & wt.of Each Panel- 680 (W) x 1200(D) x 2295 (H) mm, 2.4.0MT(Approx.), (02 no. per set), Transformer Cubicle , Dimension & wt.of Each Panel-1950 (W) x 1450 (D) x 2350 (H) mm, Wt 1.2 MT(Approx.) (01no per set)	Set	5	1.805%
2	AUTO SEQUENCER PANEL (FOR UNITS FEEDERS & GATES)			
2.1	Unit control board Panel, consist of suite of 4 panel each size 750 (W) x 800 (D) x 2295(H), Approx. WT 2.5 MT per set	Set	5	1.134%
2.2	Temperature Measurement Panel, Dimension-1000 (W) x 800 (D) x 2295 (H) mm ,Approx. Wt. 0.75 MT per Panel	No.	5	0.284%
2.3	Genrator Gauge panel, Dimension - 1000(W) x 800(D) x 2295 (H) mm, Approx. Wt 0.75 MT per Panel.	No.	5	0.284%
2.4	Unit Annunciater Panel, Dimension - 1000(W) x 800(D) x 2295 (H) mm, Approx. Wt 1.0 MT per Panel.	No.	5	0.309%
2.5	Station Aux. & Spillway& Intake gate Control Board, consist of suite of 4 panel, Size of Each panel 750(W) x 800(D) x 2295(H) , Approx. WT 2.5 MT per set	Set	1	0.227%
2.6	Common Alarm Annuuncitator Panel, overall size 1000(W) x 800(D) x 2295(H)mm, Approx. WT 1.0 MT per Panel	No.	1	0.062%
2.7	Switchyard control board Panel, consist of suite of 4 panel. Size of Each panel - 750 (W) x 800 (D) x 2295(H), Approx. WT 2.5 MT per set.	Set	1	0.227%
2.8	Switchyard Alarm Annunciater Panel, Approx. Dimension & wt.of Each Panel - 1000(W) x 800(D) x 2295 (H) mm, Approx. Wt 1.0 MT	No.	1	0.062%
2.9	Time Synchronization Panel , Approx. Dimension & wt.of Each Panel - 1000(W) x 800(D) x 2295 (H) mm, Approx. Wt 1.0 MT	No.	1	0.062%
2.10	Micro Processor Based Digital Governer Control panel Approx. Dimension & wt.of Each Panel L= 800xW= 1000 xH= 2400 MM , WT.-0.9MT .	No.	5	0.309%
2.11	Runner Control Mechanisim Panel, Approx. Dimension & wt.of Each Pane L=800 xW= 600 xH=1800 mm.WT-0.4MT Each.	No.	5	0.258%
2.12	Marshalling Box, Approx. Dimension & wt.-1500 (W) x 200(D) x 1200 (H) WT-100kg (600point) Each.	No.	5	0.206%
2.13	Marshalling Box, Approx. Dimension & wt.- 1200 (W) x 200(D) x 1200 (H)WT-80KG (450 point) Each.	No.	5	0.206%
2.14	Marshalling Box, Approx. Dimension & wt.- 1000 (W) x 200(D) x 1100 (H) WT.- 60KG (350 point) Each.	No.	5	0.206%

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SI. No.	DESCRIPTION OF WORK	UOM	QTY	Weightages
2.15	Marshalling Box, Approx. Dimension & wt. 815 (W) x 200(D) x 1000 (H) WT.- 40 KG (250 point) Each.	No.	5	0.206%
2.16	Brake & Jacking Control Panel, Approx. Dimension & wt.of Each Pane-1100(W) x 350(D) x 1200(H) & Wt. 0.35 MT	No.	5	0.258%
BB PROTECTION EQUIPMENT FOR GENERATORS, TRANSFORMER,				
1	Generator protection panels- each size 2400 (H) x 1100 (W) x 1100(D), Total WT 1 MT(Approx.) of each panel	No.	10	0.619%
2	Station transformer protection panels- each size 2400 (H) x 1100 (W) x 1100(D), Total WT 1 MT(Approx.) of each panel	No.	1	0.062%
3	Busbar protection panels- each size 2400 (H) x 1100 (W) x 1100(D), Total WT 1 MT(Approx.) of each panel	No.	2	0.124%
4	Bus coupler protection panels- each size 2400 (H) x 1100 (W) x 1100(D), Total WT 1 MT(Approx.) of each panel	No.	1	0.062%
5	Line protection panels- each size 2400 (H) x 1100 (W) x 1100(D), Total WT 1 MT (Approx.)of each panel	No.	4	0.248%
CC DC BATTERY SYSTEM (24 VOLT DC SYSTEM Transportation of material from Stores/ storage yard to erection site, Erection, Assembly, Testing & Commissioning of 24 VOLT BATTERY / BATTERY CHARGER .				
1	24V DC supply and battery system consists of battery charger, distribution panel, battery racks (Size - 3x(1800x510x800) & Wt. 2.5 MT(Approx.), . App dimension 3x(2600x900x2220) & Wt. 2.5 Mt for each section.	Set	3	1.609%
2	Erection, Testing and Commissioning of UPS, Approx. Dimension & wt.of Each Panel -2x (800x 900x 1970) mm, Approx. Wt. 2.5 MT.	Set	1	0.413%
DD CABLE TRAY,SUPPOTING STRUCTURE FOR CABLE TRAYS & ACCESSORIES (Elbow, Tee, Cross, Reducers, jointing plates , hardware etc.				
1	Hot Dipped Galvanised Angle ISA 50x 50 x 6 mm	KG	2500	0.309%
2	Hot Dipped Galvanised Angle ISA 45x45 x 5 mm	KG	4000	0.495%
3	Hot Dipped Galvanised Channel ISMC 100	KG	6000	0.743%
4	Perforated Type Aluminium Cable Tray 600(W) x 75 (H) x 2500 (L) mm	mtrs	1300	1.073%
5	Perforated Type Aluminium Cable Tray 450(W) x 75 (H) x 2500 (L) mm	mtrs	1500	1.083%
6	Perforated Type Aluminium Cable Tray 300(W) x 75 (H) x 2500 (L) mm	mtrs	2250	1.392%
7	Perforated Type Aluminium Cable Tray 150(W) x 75 (H) x 2500 (L) mm	mtrs	4500	2.320%
8	Ladder Type Aluminium Cable Tray 600(W) x 75 (H) x 2500 (L) mm	mtrs	1900	1.470%

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SHREE MAHESHWAR HYDRO POWER CORPORATION LTD, 10X40 MW, UNIT 1 - 5				
Sl. No.	DESCRIPTION OF WORK	UOM	QTY	Weightages
9	Ladder Type Aluminium Cable Tray 450(W) x 75 (H) x 2500 (L) mm	mtrs	2100	1.408%
10	Ladder Type Aluminium Cable Tray 300(W) x 75 (H) x 2500 (L) mm	mtrs	250	0.142%
11	Ladder Type Aluminium Cable Tray 150(W) x 75 (H) x 2500 (L) mm	mtrs	250	0.116%
EE	LT POWER CABLES,ALUMINIUM CONDUCTOR, 600/1100V PVC INSULATED , UNARMoured/ARMoured.			
1	4 Core x 16 sqmm	Mtrs	500	0.083%
2	4 Core x 10 sqmm	Mtrs	500	0.072%
3	4 Core x 4 sqmm	Mtrs	6000	0.619%
4	2 Core x 25 sqmm	Mtrs	500	0.062%
5	3 1/2 Core x 25 Sqmm	Mtrs	1000	0.175%
6	3-1/2 Core x 35 Sqmm	Mtrs	1250	0.232%
7	3-1/2 Core x 50 Sqmm	Mtrs	500	0.093%
8	3-1/2 Core x 120 Sqmm	Mtrs	1250	0.258%
9	1 Core x 185 Sqmm	Mtrs	3500	0.902%
10	1 Core x 400 Sqmm	Mtrs	6500	2.011%
11	1 Core x 500Sqmm	Mtrs	500	0.165%
12	1 Core x 630 Sqmm	Mtrs	2500	0.902%
13	1 Core x 1000 Sqmm	Mtrs	2500	1.031%
14	1 Core x 150 Sqmm	Mtrs	3000	0.681%
15	1 Core x 50 Sqmm	Mtrs	1000	0.124%
16	1 Core x 120 Sqmm	Mtrs	750	0.170%
17	1 Core x 240 Sqmm	Mtrs	2000	0.516%

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SI. No.	DESCRIPTION OF WORK	UOM	QTY	Weightages
FF	LT POWER CABLES,COPPER CONDUCTOR, 600/1100V PVC INSULATED , UNARMOURED/ARMOURED.			
1	2/4 Core x 6 Sqmm	Mtrs	15000	1.547%
2	1 Core x 300 Sqmm	Mtrs	3750	1.160%
GG	CONTROL CABLE, COPPER CONDUCTOR, PVC INSULATED, UNARMOURED/ARMOURED			
1	2 Core x 2.5 Sqmm	Mtrs	7500	0.773%
2	4 Core x 2.5 Sqmm	Mtrs	7500	0.928%
3	7 Core x 2.5 Sqmm	Mtrs	10000	1.547%
4	12 Core x 2.5 Sqmm	Mtrs	5000	0.928%
HH	INSTRUMENTATION CABLE, COPPER CONDUCTOR, OVERALL SHIELDED/ SREENED, UNARMOURED/ARMOURED.			
1	2 Pair x 0.5 Sqmm Twisted pair	Mtrs	6000	0.743%
2	4 Pair x 0.5 Sqmm Twisted pair	Mtrs	5000	0.825%
3	8 Pair X 0.5 Sqmm Twisted pair	Mtrs	2500	0.464%
4	16 Pair x 0.5 Sqmm Twisted pair	Mtrs	2500	0.516%
5	6 Triplet (Traid) 0.5 sqmm	Mtrs	3000	0.371%
6	2 Triplet (Traid) / 4 Triplet (Traid) 0.5 sqmm	Mtrs	4000	0.413%
II	TELEPHONE CABLE			
1	2P/5P/10P/20P	Mtrs	5000	0.722%
JJ	CABLE FOR PAS SYSTEM			
1	Signal cable	Mtrs	5000	0.516%
2	Power cable	Mtrs	5000	0.722%
KK	11 KV HT CABLE			
1	11KV,1Core,300 Sqmm,XLPE	Mtrs	8000	3.713%

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SHREE MAHESHWAR HYDRO POWER CORPORATION LTD, 10X40 MW, UNIT 1 - 5				
SI. No.	DESCRIPTION OF WORK	UOM	QTY	Weightages
LL	11KV SWITCHGEAR			
1	Switchgear board SS -A ,consists of 15 panels, Dimension & Wt. of each Panel - 2692(H)x820(W)x1831(D) WT.1.5 MT(Approx.).	Set	1	1.238%
2	Switchgear board SS -B ,consists of 4 panels, Dimension & Wt. of each Panel2692(H)x820(W)x1831(D) WT.1.5 MT.(Approx.)	Set	2	0.660%
3	Switchgear board SS -C ,consists of 5 panels, Dimension & Wt. of each Panel2692(H)x820(W)x1831(D) WT.1.5 MT.(Approx.)	Set	1	0.413%
4	Switchgear board SS -D ,consists of 7 panels, Dimension & Wt. of each Panel-2692(H)x820(W)x1831(D) WT.1.5 MT(Approx.).	Set	1	0.578%
MM	Above Grounding earthing system(LooseMS & GS flats/rod)			
1	GI strip 65 x10 mm	Mtrs	1250	0.902%
2	GI strip 50x 6 mm	Mtrs	1250	0.567%
3	GI strip 25 x 6 mm	Mtrs	1500	0.541%
4	GI Wire 8 SWG	Mtrs	5000	0.413%
NN	POWER TRANSFORMER			
1	Transportation up to foundation,Erection ,Assembly, Testing & Commssioning of main Stepup Transformer 11kv/220kv, 50 MVA. Approx. Overall dimension 6000 x 4000 x 5000 mm, Each weight- 75 MT(Approx.)Other details as described in Tender Specification.	No.	5	24.752%
2	Transportation from stores/storage yard to erection site ,Assembly, Testing & Commssioning of station service. Transformer 220kv/11kv, 7.5 MVA Overall dimension 5000 x 3000 x 4000 mm, weight- 25 MT(Approx.)Other details as described in Tender Specification.	No.	1	2.063%
3	Transportation from stores/storage yard to erection site,Erection ,Assembly, Testing & Commssioning of distribution(cast resin dry type) . Transformer 11kv/433v, 1.6 MVA Overall dimension 2600 x 2400 x 2800 mm, weight 6.0 MT(Approx.)Other details as described in Tender Specification.	No.	1	0.928%
4	Transportation from stores/storage yard to erection site,Erection ,Assembly, Testing & Commssioning of distribution(cast resin dry type) . Transformer11kv/433v 630 kVA Overall diemension 2400 x 2200 x 2600 mm, Each weight-3.7 MT(Approx.)Other details as described in Tender Specification.	No.	3	1.547%

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SI. No.	DESCRIPTION OF WORK	UOM	QTY	Weightages
5	Transportation from stores/storage yard to erection site, Erection ,Assembly, Testing & Commssioning of distribution (cast resin dry type) . Transformer 11kv/433v, 500 kVA(UAT) Overall dimension 2200 x 2000 x 2400 mm, Each weight 3.5 MT(Approx.)Other details as described in Tender Specification	No.	5	2.578%
6	Transportation from stores/storage yard to erection site, Erection ,Assembly, Testing & Commssioning of Excitation Transformer 565 kVA,11KV/280V. Overall dimension 2200 x 2000 x2400 mm,Each weight 3.5 MT(Approx.).Other details as described in Tender Specification.	No.	5	4.125%
OO	LOCAL STARTERS BOX			
1	HP Lube oil,Stator Heater control, Brake dust collector panels. Size of Each Panel W=1500xD=1000xH=1500 mm. WT-0.3 Ton each	Nos.	25	0.619%
2	Cooling water panel, Size of Each Panel W=2000xD=1000xH=3000 mm., WT-0.75 Ton each(Approx.)	Nos.	6	0.173%
3	Drainage panel, Size of Each Panel W=2000xD=1000xH=3000 mm., WT-0.5 Ton each(Approx.)	Nos.	2	0.058%
4	Dewatering panel,Size of Each Panel W=2000xD=1000xH=3000 mm., WT-0.5 Ton each(Approx.)	Nos.	3	0.087%
5	HP Compressed panel,Size of Each Panel W=2000xD=1000xH=3000 mm., WT-0.5 Ton each(Approx.)	Nos.	1	0.029%
6	LP Compressed air panel ,Size of Each Panel W=2000xD=1000xH=3000 mm.,. WT-0.5 Ton each(Approx.)	Nos.	1	0.029%
7	Top Cover Drainage Pump Stater & Control panel, Size of Each Panel 1500 (W) x 1000 (D) x 3000(H) , WT.-0.5 MT(Approx.)	Nos.	10	0.289%
8	Local Starter Box, Size of Each Panel W=2000xD=1000xH=3000 mm, WT-0.75 Ton each(Approx.)	Nos.	5	0.144%
9	Local Starter Box, Size of Each Panel W=3000xD=1000xH=2500 mm, WT-0.9 Ton each(Approx.)	Nos.	1	0.029%
PP	INTEGRATED ELECTRICAL TESTING/ COMMISSIONING OF GENERATOR CONTROLS AND PROTECTIONS RELAY PANELS & ASSOCIATED EQUIPMENTS GT BREAKERS ETC. (Scope of work as detailed in tender specification, which items as indicated in this rate schedule against the Head BB & LL.)	LS	LS	2.320%
QQ	TAN DELTA TEST ON GT BUSHING & OTHER EQUIPMENT AS REQUIRED	SET	5	2.063%
RR	TAN DELTA TEST ON STATION TRANSFORMER BUSHING & OTHER EQUIPMENT AS REQUIRED	SET	1	0.413%

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SHREE MAHESHWAR HYDRO POWER CORPORATION LTD, 10X40 MW, UNIT 1 - 5				
Sl. No.	DESCRIPTION OF WORK	UOM	QTY	Weightages
SS	FABRICATION /STRUCTURE STEEL(MS angle,channel,plate)	KG	10000	1.031%
TT	TESTING OF BUS DUCT(segregated)TERMINAL CUBICLE	SET	5	0.206%
UU	TESTING OF ELECTRICAL MOTOR including dryout	NO	45	0.464%
VV	BELOW GROUND EARTHING			
1	Test pits of main power block as per drawing.	NO	40	1.444%
WW	TRANSFORMER RAILS			
1	Taking delivery of materials from stores/ store yard, loading , transporting, unloading at site and fixing transformer rails including guide, rails in concrete including jointing of rails, anchoring lugs etc. complete as per specification. (Rails and Guide channel shall be supplied by BHEL free of cost). Length of track of rail =500 Meters	MT	26	2.681%
XX	FIELD & PANEL MOUNTED INSTRUMENTATION			
1	Vibration Monitor 4 Channel	No	5	0.413%
2	Rotor Temperature Recorder	No	5	0.144%
3	24 point temperature scanner Cum recorder	No	20	0.433%
4	Dial Type thermameter capillary type	No	50	0.567%
5	12 Point temperature scanner	No	5	0.093%
6	LVDT Consist of Sensor, Proximeter, extension cables, Proximeter housing , Protective Flexible pipe etc.	Set	5	0.217%
7	Pressure Transmitters	Set	5	0.036%
8	Electrical Transducers	Set	5	0.052%
9	Junction Bos	Set	5	0.046%
10	Toothed Wheel and magnetis pick up	Set	5	0.052%
yy	SCADA SYSTEM & MIMIC PANELS			
1	Operator Work Station Consist of Two set of VUDs, Key Boards, Mouse, Perperial cables , computer furniture etc.	set	1	0.103%
2	Engineering Station Consist of One set of VUDs, Key Boards, Mouse, Perperial cables , computer furniture etc.	Set	1	0.062%
3	Printer Console Consist of 2 Nos. Laser Printer and 2 Nos. Ink Jet printer, accessories and computer furniture etc.	Set	1	0.052%
4	Event Recorder	No	1	0.057%
5	Mimic Panel	No	5	0.516%
GROSS TOTAL				100.00%

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