

MAHARASHTRA KRISHNA VALLEY DEVELOPMENT CORPORATION PUNE 411011

(A GOVT. OF MAHARASHTRA UNDERTAKING)

BUDGETORY OFFER NOTICE NO. EE/SECPK/06/2015-16

Budgetory offer invited for the Operation , Repairs, Maintenance and Security work for Mhaisal Pump House St. I to V for estimate purpose for A.M.C. from the contractors having the experience in same field. Please submit the rates to The Office of Executive Engineer, Takari Mechanical & Electrical Division, Warnali, Sangli 416415 Maharashtra. on or before 07/07/2015.

Description of work

A) The work consists of Operation , Repairs, Maintenance of V.T. pumps & allied elect. & Mech equipments and Security work for Mhaisal Pump House St. I to V with following specification of pumps

	Mhaisal St. I	Mhaisal St. II	Mhaisal St. III	Mhaisal St. IV	Mhaisal St. V
Type of Pump	V.T. Pump	V.T. Pump	V.T. Pump	V.T. Pump	V.T. Pump
Make	Kirloskar	Kirloskar	Kirloskar	Kirloskar	Kirloskar
Model	BHR 95	BHR 95	BHR 115	BHR 115	BHR 95
H.P.	1062	1212	652	960	772
Operating voltage	6.6 KV	6.6 KV	6.6 KV	6.6 KV	6.6 KV
No. of working pumps for operation	21	25	14	14	7

Minimum Operational Staff with qualification of suitable I.T.I. trade as follows for one shift of 8 Hrs. X 3 Shifts round the clock will be as follows

Per shift staff	Mhaisal St. I	Mhaisal St. II	Mhaisal St. III	Mhaisal St. IV	Mhaisal St. V
Pump operator	2	2	2	2	1
Electrician	1	1	1	1	1
Fitter	1	1	1	1	1
Helper	4	4	4	4	3

Above mentioned staff per shift for various stages is shown. Operational staff for 3 shifts should be maintained by the contractor for 150 days minimum to 240 days maximum for operation of pumps. Operational duties includes daily operation of pumps with allied electro. mechanical equipments with trouble free operation of pumps as per manual of manufacturer & instructions of Engineer in charge .

The operation staff should also look after minor repair works observed before commissioning of pumps and during operation period for non stop running of pumping Special tools , tackles and testing equipments should be arranged by contractor at his own cost for each stage separately.

Sr.No.	Description	Unit	Rate
1	Operational Staff	Per day per pump house	

B) Operation of one way surge tank and allied components.

Following staff is required for Operation of one way surge tank and allied components for each location.

Per shift staff	Mhaisal St. I	Mhaisal St. II	Mhaisal St. III	Mhaisal St. IV	Mhaisal St. V
Fitter	1	1	-	1	-
Helper	1	1	-	1	-

Sr.No.	Description	Unit	Rate
1	Operational Staff	Per day per pump house	

C) Maintenance and major / Minor works:-

Maintenance for above pumps & allied electro mechanical equipment should be carried out during lay off period of 125 days or less. Minimum Staff will be in following pattern in single general shift. for Maintenance and major / Minor works.

Per shift staff	Mhaisal St. I	Mhaisal St. II	Mhaisal St. III	Mhaisal St. IV	Mhaisal St. V
Mechanic	1	1	1	1	1
Electrician	1	1	1	1	1
Fitter	1	1	1	1	1
Helper	3	3	3	3	2

The Maintenance and repairs of V.T. Pumps and allied electro mechanical equipment should be carried out as per the manuals of manufacturers & as directed by Engineer in charge. The spares required for minor / major repairs should be procured by the contractor at the sanctioned rate of deptt.

The following works are also included in the scope of Contractor.

- 1) Repairs & Maintenance of All intake gate structures with hoisting arrangement.
- 2) Repairs & Maintenance of KAV.BFV.NRV in pump house and on rising main, O.S.T and also of air vessel and compressor etc.
- 3) Contractor should provide all discharge measuring equipment to the Deptt. permanently and conduct P.G.Test as and when demanded by department

Sr.No.	Description	Unit	Rate
1	Maintenance Staff	Per day per pump house	

D) Security of pump house, switchyard, R.M. & Intake gate structures

Adequate staff for security of pump house and premises,
Switchyard and complete R.M. up to del. Chamber should be kept
from recognized security service for 24 hours.

Sr.No.	Description	Unit	Rate
1	Security personnel	Per day per pump House	

E) List of Minor spare parts is attached herewith to quote item wise rates**I) Mhaikal LIS stage I****a) Mechanical part (Minor Repair Work) .**

Item No.	Description	Qty.	Unit	Rate
I	Supplying of following spares for Kirloskar make BHR 95 type V. T. pumps at Mhaikal LIS stage I.			
1	Ø 20 mm gland packing	1	kg	
2	Ø 1000 mm neoprene gasket having thickness of 8 mm for HOPD, BFV & NRV	1	No	
3	Rubber seat ring for Ø 1000 mm HOPD	1	No	
4	Hydraulic cylinder oil seal kit for HOPD	1	Set	
5	Hydraulic hose SAE 100 R2-5	1	No	
6	Return oil filter of polyhydron make having	1	No	
7	Hydraulic power pack oil seal kit for HOPD	1	Set	
8	Seasoned wood with natural rubber coating	1	No	
9	Seasoned wood with vulcanite coating big	1	No	
10	Natural rubber seat ring for 200 mm KAV	1	No	
11	Ø 50 mm brass sluice valve for air vent	1	No	
12	Ø 20 mm ball valve for cooling arrangement	1	No	
13	Pressure guage having range of 0 to 100 kgf	1	No	
14	Oil level indicator for thrust bearing housing	1	No	
15	Cardium compound	1	Kg	
16	Flexible coupling for 25/5 ton capacity EOT	1	No	
17	Brake shoe for 25/5 ton capacity crane	1	No	
18	Coupling Pin with bush	1	No	
19	Pedastle bearing for 25/5 ton capacity crane	1	No	
20	Contact for 25/5 ton capacity crane	1	No	
21	Fuse for 25/5 ton capacity crane	1	No	
22	Limit switches for 25/5 ton capacity crane	1	No	

b) Electrical part (Minor Repair Work)**Minor spare parts**

Sr. No.	Item	Qty.	Unit	Rate
1	Fuse link 2-16 Amp. For Control Circuit	1	No	
2	HBC Type Fuse link 2-32 Amp. For Battery Charger	1	No	
3	Fuse link 16-32 A	1	No	
4	Fuse link 63 Amp	1	No	
5	Fuse link 100 Amp	1	No	
6	6.6 KV, 250 Amp bolted type Motor Protection Fuse	1	No	
7	6.6 KV, 60 Amp bolted type Fuse for Capacitor	1	No	
8	6.6 KV, 3 Amp PT. Fuse	1	No	
9	HRC control fuse base for 2A-16A	1	No	
10	Closing coil 220 VDC for VC/ VCB	1	No	
11	Tripping coil 220 VDC for VC/VCB	1	No	
12	Indicating lamps	1	No	

13	Local/Remote control switch with lock of 16A/240V	1	No	
14	Spring return type breaker control switch of 25A,440V	1	No	
15	Vnalog type voltmeter 0-7.2KV	1	No	
16	Voltmeter selector switch of 10A/250V	1	No	
17	Analog type ammeter 0-600A	1	No	
18	Ammeter selector switch of 10A/440V	1	No	
19	ON/OFF switch of 16A/240V	1	No	
20	Control terminals	1	No	
21	Plug in type Relay with 2 c/o,6A,240VDC	1	No	
22	Aux. contactor 16 A,415 Volt	1	No	
23	Add on contactor with 1N/O+1N/C	1	No	
24	Time delay block 100ms-1 sec/10-180 sec/3-30 min.	1	No	
25	Copper Conductor control wire of 2.5 Sq.mm	1	Mtr	
26	Hour Meter, Flush Mounting	1	No	
27	ABB make motor protection Relay SPAM-	1	No	
28	Castrol AP.3 Grease to NDE and DE Bearing of Motor	1	Kg	
29	Transformer oil	1	Ltr	
30	T-5,1 X 28 Watt Tube Light	1	No	
31	T-5,1 X 28 Watt Light Fitting	1	No	
32	Copper Conductor 4 x 4 Sq.mm L.T.Cable	1	Mtr	
33	H.T. Cable Termination kit 1 x 240 sq.mm Allminium	1	No	
34	Induction lamp (Highbay type.) 250 W	1	No	
35	Lighting Cable 2.5 sq.mm Copper	1	Mtr	
36	Distribution board with MCB 12 way	1	No	
37	Annunciator (12 window) for RCP	1	No	
38	L.T. cable lugs upto 95 sq.mm	1	No	

II) Mhaaisal LIS stage II

a) Mechanical part (Minor Repair Work) .

Item No.	Description	Qty.	Unit	Rate
I	Supplying of following spares for Kirloskar make BHR 95 type V. T. pumps at Mhaaisal LIS stage II.			
1	Ø 20 mm gland packing	1	kg	
2	Ø 1000 mm neoprene gasket having	1	No	
3	Rubber seat ring for Ø 1000 mm HOPD	1	No	
4	Hydraulic cylinder oil seal kit for HOPD	1	Set	
5	Hydraulic hose SAE 100 R2-5	1	No	
6	Return oil filter of polyhydron make having	1	No	
7	Hydraulic power pack oil seal kit for HOPD	1	Set	
8	Seasoned wood with natural rubber coating	1	No	
9	Seasoned wood with vulcanite coating big	1	No	
10	Natural rubber seat ring for 200 mm KAV	1	No	
11	Ø 50 mm brass sluice valve for air vent	1	No	
12	Ø 20 mm ball valve for cooling arrangement	1	No	
13	Pressure guage having range of 0 to 100 kgf	1	No	
14	Oil level indiactor for thrust bearing housing	1	No	
15	Cardium compound	1	Kg	
16	Flexible coupling for 25/5 ton capacity EOT	1	No	
17	Brake shoe for 25/5 ton capacity crane	1	No	
18	Coupling Pin with bush	1	No	

b) Electrical part (Minor Repair Work)**Minor spare parts**

Sr. No.	Item	Qty.	Unit	Rate
1	Fuse link 2-16 Amp. For Control Circuit	1	No	
2	HBC Type Fuse link 2-32 Amp.For Battery Charger	1	No	
3	Fuse link 16-32 A	1	No	
4	Fuse link 63 Amp	1	No	
5	Fuse link 100 Amp	1	No	
6	6.6 KV, 250 Amp bolted type Motor Protection Fuse	1	No	
7	6.6 KV, 60 Amp bolted type Fuse for Capacitor	1	No	
8	6.6 KV, 3 Amp PT. Fuse	1	No	
9	HRC control fuse base for 2A-16A	1	No	
10	Closing coil 220 VDC for VC/ VCB	1	No	
11	Tripping coil 220 VDC for VC/VCB	1	No	
12	Indicating lamps	1	No	
13	Local/Remote control switch with lock of 16A/240V	1	No	
14	Spring return type breaker control switch of 25A,440V	1	No	
15	Vnalog type voltmeter 0-7.2KV	1	No	
16	Voltmeter selector switch of 10A/250V	1	No	
17	Analog type ammeter 0-600A	1	No	
18	Ammeter selector switch of 10A/440V	1	No	
19	ON/OFF switch of 16A/240V	1	No	
20	Control terminals	1	No	
21	Plug in type Relay with 2 c/o,6A,240VDC	1	No	
22	Aux. contactor 16 A,415 Volt	1	No	
23	Add on contactor with 1N/O+1N/C	1	No	
24	Time delay block 100ms-1 sec/10-180 sec/3-30 min.	1	No	
25	Copper Conductor control wire of 2.5 Sq.mm	1	Mtr	
26	Hour Meter, Flush Mounting	1	No	
27	ABB make motor protection Relay	1	No	
28	Castrol AP.3 Grease to NDE and DE Bearing of Motor	1	Kg	
29	Transformer oil	1	Ltr	
30	T-5,1 X 28 Watt Tube Light	1	No	
31	T-5,1 X 28 Watt Light Fitting	1	No	
32	Copper Conductor 4 x 4 Sq.mm L.T.Cable	1	Mtr	
33	H.T. Cable Termination kit 1 x 240 sq.mm Allminium	1	No	
34	Induction lamp (Highbay type.) 250 W	1	No	
35	Lighting Cable 2.5 sq.mm Copper	1	Mtr	
36	Distribution board with MCB 12 way	1	No	
37	Annunciator (12 window) for RCP	1	No	

III) Mhaisal LIS stage III**a) Mechanical part (Minor Repair Work)**

Item No.	Description	Qty.	Unit	
I	Supplying of following spares for Kirloskar make BHR 115 type V. T. pumps at Mhaisal LIS stage III.			
1	Ø 20 mm gland packing	1	kg	
2	Ø 1200 mm neoprene gasket having	1	No	
3	Rubber seat ring for Ø 1200 mm butterfly	1	No	
4	Seasoned wood with natural rubber coating	1	No	
5	Seasoned wood with vulcanite coating big	1	No	
6	Natural rubber seat ring for 200 mm KAV	1	No	
7	Ø 50 mm brass sluice valve for air vent	1	No	
8	Ø 20 mm ball valve for cooling arrangement	1	No	
9	Pressure guage having range of 0 to 100 kgf	1	No	
10	Oil level indiactor for thrust bearing housing	1	No	
11	Cardium compound	1	Kg	
12	Flexible coupling for 50 HP Kirloskar make	1	No	
13	Flexible coupling for 25/5 ton capacity EOT	1	No	
14	Brake shoe for 25/5 ton capacity crane	1	No	
15	Coupling Pin with bush	1	No	
16	Oil seal kit for NRV cylinder	1	No	

b)Electrical part (Minor Repair Work)

Sr. No.	Item	Qty.	Unit	Rate
1	Fuse link 2-16 Amp. For Control Circuit	1	No	
2	HBC Type Fuse link 2-32 Amp.For Battery Charger	1	No	
3	Fuse link 16-32 A	1	No	
4	Fuse link 63 Amp	1	No	
5	Fuse link 100 Amp	1	No	
6	6.6 KV, 160 Amp bolted type Motor Protection Fuse	1	No	
7	6.6 KV, 60 Amp bolted type Fuse for Capacitor	1	No	
8	6.6 KV, 3 Amp PT. Fuse	1	No	
9	HRC control fuse base for 2A-16A	1	No	
10	Closing coil 220 VDC for VC/ VCB	1	No	
11	Tripping coil 220 VDC for VC/VCB	1	No	
12	Indicating lamps	1	No	
13	Local/Remote control switch with lock of 16A/240V	1	No	
14	Spring return type breaker control switch of 25A,440V	1	No	
15	Vnalog type voltmeter 0-7.2KV	1	No	
16	Voltmeter selector switch of 10A/250V	1	No	
17	Analog type ammeter 0-600A	1	No	
18	Ammeter selector switch of 10A/440V	1	No	
19	ON/OFF switch of 16A/240V	1	No	
20	Control terminals	1	No	
21	Plug in type Relay with 2 c/o,6A,240VDC	1	No	
22	Aux. contactor 16 A,415 Volt	1	No	
23	Add on contactor with 1N/O+1N/C	1	No	
24	Time delay block 100ms-1 sec/10-180 sec/3-30 min.	1	No	
25	Copper Conductor control wire of 2.5 Sq.mm	1	Mtr	
26	Hour Meter, Flush Mounting	1	No	
27	ABB make motor protection Relay	1	No	
28	Castrol AP.3 Grease to NDE and DE Bearing of Motor	1	Kg	
29	Transformer oil	1	Ltr	
30	T-5,1 X 28 Watt Tube Light	1	No	

31	T-5,1 X 28 Watt Light Fitting	1	No	
32	Copper Conductor 4 x 4 Sq.mm L.T.Cable	1	Mtr	
33	H.T. Cable Termination kit 3 x 150 sq.mm Copper	1	No	
34	Induction lamp (Highbay type.) 250 W	1	No	
35	Lighting Cable 2.5 sq.mm Copper	1	Mtr	
36	Distributiion board with MCB 12 way	1	No	
37	Annunciator (12 window) for RCP	1	No	

IV) Mhaaisal LIS stage IV

a)Mechanical part (Minor Repair Work)

Item No.	Description	Qty.	Unit	Rate
I	Supplying of following spares for Kirloskar make BHR 90 type V. T. pumps at Mhaaisal LIS stage IV.			
1	Ø 20 mm gland packing	1	kg	
2	Ø 1000 mm neoprene gasket having	1	No	
3	Rubber seat ring for Ø 1000 mm butterfly	1	No	
4	Seasoned wood with natural rubber coating	1	No	
5	Seasoned wood with vulcanite coating big	1	No	
6	Natural rubber seat ring for 200 mm KAV	1	No	
7	Ø 50 mm brass sluice valve for air vent	1	No	
8	Ø 20 mm ball valve for cooling arrangement	1	No	
9	Pressure guage having range of 0 to 100 kgf	1	No	
10	Oil level indiactor for thrust bearing housing	1	No	
11	Cardium compound	1	Kg	
12	Flexible coupling for 50 HP Kirloskar make	1	No	
13	Flexible coupling for 25/5 ton capacity EOT	1	No	
14	Brake shoe for 25/5 ton capacity crane	1	No	
15	Coupling Pin with bush	1	No	
16	Oil seal kit for NRV cylinder	1	No	

b)Electrical part (Minor Repair Work)

Sr. No.	Item	Qty.	Unit	Rate
1	Fuse link 2-16 Amp. For Control Circuit	1	No	
2	HBC Type Fuse link 2-32 Amp.For Battery Charger	1	No	
3	Fuse link 16-32 A	1	No	
4	Fuse link 63 Amp	1	No	
5	Fuse link 100 Amp	1	No	
6	6.6 KV, 160 Amp bolted type Motor Protection Fuse	1	No	
7	6.6 KV, 60 Amp bolted type Fuse for Capacitor	1	No	
8	6.6 KV, 3 Amp PT. Fuse	1	No	
9	HRC control fuse base for 2A-16A	1	No	
10	Closing coil 220 VDC for VC/ VCB	1	No	
11	Tripping coil 220 VDC for VC/VCB	1	No	
12	Indicating lamps	1	No	
13	Local/Remote control switch with lock of 16A/240V	1	No	
14	Spring return type breaker control switch of 25A,440V	1	No	
15	Vnalog type voltmeter 0-7.2KV	1	No	
16	Voltmeter selector switch of 10A/250V	1	No	
17	Analog type ammeter 0-600A	1	No	
18	Ammeter selector switch of 10A/440V	1	No	
19	ON/OFF switch of 16A/240V	1	No	
20	Control terminals	1	No	
21	Plug in type Relay with 2 c/o,6A,240VDC	1	No	
22	Aux. contactor 16 A,415 Volt	1	No	
23	Add on contactor with 1N/O+1N/C	1	No	

24	Time delay block 100ms-1 sec/10-180 sec/3-30 min.	1	No	
25	Copper Conductor control wire of 2.5 Sq.mm	1	Mtr	
26	Hour Meter, Flush Mounting	1	No	
27	ABB make motor protection Relay	1	No	
28	Castrol AP.3 Grease to NDE and DE Bearing of Motor	1	Kg	
29	Transformer oil	1	Ltr	
30	T-5,1 X 28 Watt Tube Light	1	No	
31	T-5,1 X 28 Watt Light Fitting	1	No	
32	Copper Conductor 4 x 4 Sq.mm L.T.Cable	1	Mtr	
33	H.T. Cable Termination kit 3 x 150 sq.mm Copper	1	No	
34	Induction lamp (Highbay type.) 250 W	1	No	
35	Lighting Cable 2.5 sq.mm Copper	1	Mtr	
36	Distribution board with MCB 12 way	1	No	
37	Annunciator (12 window) for RCP	1	No	

V) Mhaisal LIS stage V

a) Mechanical part (Minor Repair Work)

Item No.	Description	Qty.	Unit	Rate
I	Supplying of following spares for Kirloskar make BHR 115 type V. T. pumps at Mhaisal LIS stage V.			
1	Ø 20 mm gland packing	1	kg	
2	Ø 1200 mm neoprene gasket having thickness of 8 mm for HOPD, BFV & NRV	1	No	
3	Rubber seat ring for Ø 1200 mm HOPD valve	1	No	
4	Hydraulic cylinder oil seal kit for HOPD cylinder having 100 bore & 500 stroke	1	Set	
5	Hydraulic hose SAE 100 R2-5	1	No	
6	Return oil filter of polyhydron make having specification RLF-06-25-VI	1	No	
7	Hydraulic power pack oil seal kit for HOPD power pack	1	Set	
8	Seasoned wood with natural rubber coating small ball for 200 mm KAV	1	No	
9	Seasoned wood with vulcanite coating big ball for 200 mm KAV	1	No	
10	Natural rubber seat ring for 200 mm KAV	1	No	
11	Ø 50 mm brass sluice valve for air vent arrangement of pump	1	No	
12	Ø 20 mm ball valve for cooling arrangement of thrust bearing	1	No	
13	Pressure guage having range of 0 to 100 kgf /cm ² of 150 mm dia	1	No	
14	Oil level indiactor for thrust bearing housing	1	No	
15	Cardium compound	1	Kg	
16	Flexible coupling for 25/5 ton capacity EOT crane	1	No	
17	Brake shoe for 25/5 ton capacity crane	1	No	
18	Coupling Pin with bush	1	No	

b) Electrical part (Minor Repair Work)**Minor spare parts**

Sr. No.	Item	Qty.	Unit	Rate
1	Fuse link 2-16 Amp. For Control Circuit	1	No	
2	HBC Type Fuse link 2-32 Amp.For Battery Charger	1	No	
3	Fuse link 16-32 A	1	No	
4	Fuse link 63 Amp	1	No	
5	Fuse link 100 Amp	1	No	
6	6.6 KV, 160 Amp bolted type Motor Protection Fuse	1	No	
7	6.6 KV, 60 Amp bolted type Fuse for Capacitor	1	No	
8	6.6 KV, 3 Amp PT. Fuse	1	No	
9	HRC control fuse base for 2A-16A	1	No	
10	Closing coil 110 VDC for VC/ VCB	1	No	
11	Tripping coil 110 VDC for VC/VCB	1	No	
12	Indicating lamps	1	No	
13	Local/Remote control switch with lock of 16A/240V	1	No	
14	Spring return type breaker control switch of 25A,440V	1	No	
15	Vnalog type voltmeter 0-7.2KV	1	No	
16	Voltmeter selector switch of 10A/250V	1	No	
17	Analog type ammeter 0-600A	1	No	
18	Ammeter selector switch of 10A/440V	1	No	
19	ON/OFF switch of 16A/240V	1	No	
20	Control terminals	1	No	
21	Plug in type Relay with 2 c/o,6A,240VDC	1	No	
22	Aux. contactor 16 A,415 Volt	1	No	
23	Add on contactor with 1N/O+1N/C	1	No	
24	Time delay block 100ms-1 sec/10-180 sec/3-30 min.	1	No	
25	Copper Conductor control wire of 2.5 Sq.mm	1	Mtr	
26	Hour Meter, Flush Mounting	1	No	
27	ABB make motor protection Relay	1	No	
28	Castrol AP.3 Grease to NDE and DE Bearing of Motor	1	Kg	
29	Transformer oil	1	Ltr	
30	T-5,1 X 28 Watt Tube Light	1	No	
31	T-5,1 X 28 Watt Light Fitting	1	No	
32	Copper Conductor 4 x 4 Sq.mm L.T.Cable	1	Mtr	
33	H.T. Cable Termination kit 3 x 150 sq.mm Copper	1	No	
34	Induction lamp (Highbay type.) 250 W	1	No	
35	Lighting Cable 2.5 sq.mm Copper	1	Mtr	
36	Distribution board with MCB 12 way	1	No	
37	Annunciator (12 window) for RCP	1	No	

G) List of major spare parts is attached herewith to quote item wise rates**I) Mhaisal Stage I****a)Mechanical part (Major Repair Work)**

Item No.	Description	Qty.	Unit	Rate
I	Supplying of following spares for Kirloskar make BHR 95 type V. T. pumps at Mhaisal LIS stage I. The detailed specification of below parts are as per attached drawings.			
1	Gland sleeve Part No 310	1	No	
2	Ratchet pin with spring Part No 369	1	No	
3	Ratchet cover Part No 474	1	No	
4	Ratchet housing	1	No	
5	Taper roller bearing SKF 29338E	1	No	
6	Strainer Part No 216	1	No	
7	Bell mouth Part No 211	1	No	
8	Bearing bush Part No 365	1	No	
9	Impellar nut Part No 330	1	No	
10	Washer Part No 410	1	No	
11	Casing ring Part No 190	1	No	
12	Impellar wearing ring Part No 196	1	No	
13	Casing ring Part No 190	1	No	
14	Impellar Shaft sleeve Part No 311	1	No	
15	Bowl rubber bearing Part No 364	1	No	
16	Impellar Shaft Part No.	1	No	
17	O ring Part No 524	1	No	
18	Intermediate shaft sleeve Part No 312	1	No	
19	Transmission bearing Part No. 367	1	No	
20	Muff coupling Part No 346	1	No	
21	Transmission shaft Part No. 184	1	No	
22	Bearing holder Part No. 264	1	No	
23	Distance sleeve Part No. 317	1	No	
24	Throttle bush Part No 362	1	No	
25	Split gland Part No 229	1	No	
26	Thrust bearing housing Part No 247	1	No	
27	Thrust collar Part No 363	1	No	
28	Thrust bearing lid Part No. 279	1	No	
29	Bearing Nut Part No 336	1	No	
30	Lock Nut Part No 336	1	No	
31	Ø1000 mm Rubber Expansion Joint (REJ) of PN 1.6 rating	1	No	

b)Electrical part (Major Repair Work)

Item No.	Description of Item	Qty.	Unit	Rate
1	Motor bearings			
	DE side 6232MC3	1	No	
	NDE side 7328	1	No	
2	ABB Make, VD4 type ,11KV, 3 ph,50hz,3150A,40KA,VCB	1	No	
3	ABB Make, VD4 type ,11KV, 3 ph,50hz,630A,25KA,VCB	1	No	
4	Motor protection relay ABB make, type SPAM 150C	1	No	
5	6.6 KV, 279 KVAR Capacitor Bank	1	No	
6	6.6 KV, 3 ph,50hz,880 KW,BHEL make motor rewinding	1	No	
7	415V, 3ph, 50Hz,/800A,ACB	1	No	
8	220V,30A Float cum Boost type battery charger unit	1	No	
9	Rubber mat for H.T. Panel	1	Sq.mm	

II) Mhaisai Stage II**a) Mechanical part (Major Repair Work)**

Item No.	Description	Qty.	Unit	Rate
I	Supplying of following spares for Kirloskar make BHR 95 type V. T. pumps at Mhaisai LIS stage II. The detailed specification of below parts are as per attached drawings.			
1	Gland sleeve Part No 310	1	No	
2	Ratchet pin with spring Part No 369	1	No	
3	Ratchet cover Part No 474	1	No	
4	Ratchet housing	1	No	
5	Taper roller bearing SKF 29344E	1	No	
6	Strainer Part No 216	1	No	
7	Bell mouth Part No 211	1	No	
8	Bearing bush Part No 365	1	No	
9	Impellar nut Part No 330	1	No	
10	Washer Part No 410	1	No	
11	Casing ring Part No 190	1	No	
12	Impellar wearing ring Part No 196	1	No	
13	Casing ring Part No 190	1	No	
14	Impellar Shaft sleeve Part No 311	1	No	
15	Bowl rubber bearing Part No 364	1	No	
16	Impellar Shaft Part No.	1	No	
17	O ring Part No 524	1	No	
18	Intermediate shaft sleeve Part No 312	1	No	
19	Transmission bearing Part No. 367	1	No	
20	Muff coupling Part No 346	1	No	
21	Transmission shaft Part No. 184	1	No	
22	Bearing holder Part No. 264	1	No	
23	Distance sleeve Part No. 317	1	No	
24	Throttle bush Part No 362	1	No	
25	Split gland Part No 229	1	No	
26	Thrust bearing housing Part No 247	1	No	
27	Thrust collar Part No 363	1	No	
28	Thrust bearing lid Part No. 279	1	No	
29	Bearing Nut Part No 336	1	No	
30	Lock Nut Part No 336	1	No	
31	Ø1000 mm Rubber Expansion Joint (REJ) of PN 1.6 rating	1	No	

b) Electrical part (Major Repair Work)

Item No.	Description of Item	Qty.	Unit	Rate
1	Motor bearings			
	DE Side 7326DGM	1	No	
	NDE Side 6232MC3	1	No	
2	ABB Make, VD4 type ,11KV, 3 ph,50hz,630A,25KA,VCB	1	No	
3	Motor protection relay ABB make, type SPAM 150C	1	No	
4	6.6 KV, 318 KVAR Capacitor Bank	1	No	
5	6.6 KV, 3 ph,50hz,1005 KW,BHEL make motor rewinding	1	No	
6	415V, 3ph, 50Hz,800A,ACB	1	No	
7	Rubber mat for H.T. Panel	1	Sq.mm	

III) Mhaisal Stage III**a) Mechanical part (Major Repair Work)**

Item No.	Description	Qty.	Unit	Rate
I	Supplying of following spares for Kirloskar make BHR 115 type V. T. pumps at Mhaisal LIS stage III. The detailed specification of			
1	Gland sleeve Part No 310	1	No	
2	Ratchet pin with spring Part No 369	1	No	
3	Ratchet cover Part No 474	1	No	
4	Ratchet housing	1	No	
5	Taper roller bearing SKF 29338E	1	No	
6	Strainer Part No 216	1	No	
7	Bell mouth Part No 211	1	No	
8	Bearing bush Part No 365	1	No	
9	Impellar nut Part No 330	1	No	
10	Washer Part No 410	1	No	
11	Casing ring Part No 190	1	No	
12	Impellar wearing ring Part No 196	1	No	
13	Casing ring Part No 190	1	No	
14	Impellar Shaft sleeve Part No 311	1	No	
15	Bowl rubber bearing Part No 364	1	No	
16	Impellar Shaft Part No.	1	No	
17	O ring Part No 524	1	No	
18	Intermediate shaft sleeve Part No 312	1	No	
19	Transmission bearing Part No. 367	1	No	
20	Muff coupling Part No 346	1	No	
21	Transmission shaft Part No. 184	1	No	
22	Bearing holder Part No. 264	1	No	
23	Distance sleeve Part No. 317	1	No	
24	Throttle bush Part No 362	1	No	
25	Split gland Part No 229	1	No	
26	Thrust bearing housing Part No 247	1	No	
27	Thrust collar Part No 363	1	No	
28	Thrust bearing lid Part No. 279	1	No	
29	Bearing Nut Part No 336	1	No	
30	Lock Nut Part No 336	1	No	
31	Ø1200 mm Rubber Expansion Joint (REJ) of PN 1.6 rating	1	No	
32	Ø1200 mm Non return valve (NRV) of PN 1 rating	1	No	

b) Electrical part (Major Repair Work)

Item No.	Description of Item	Qty.	Unit	Rate
1	Motor bearings			
	7320BECBM	1	No	
	NU232EMC3	1	No	
2	Motor protection relay ABB make, type SPAM 150C	1	No	
3	6.6 KV,168 KVAR,Capacitor Bank	1	No	
4	6.6 KV, 3 ph,50hz,534KW,Crompton Greaves make motor rewinding	1	No	
5	415V, 3ph, 50Hz,630A,ACB	1	No	
6	Rubber mat for H.T. Panel	1	Sq.mm	

IV) Mhaisal Stage IV**a) Mechanical part (Major Repair Work)**

Item No.	Description	Qty.	Unit	Rate
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I	Supplying of following spares for Kirloskar			
1	Gland sleeve Part No 310	1	No	
2	Ratchet pin with spring Part No 369	1	No	
3	Ratchet cover Part No 474	1	No	
4	Ratchet housing	1	No	
5	Taper roller bearing SKF 29338E	1	No	
6	Strainer Part No 216	1	No	
7	Bell mouth Part No 211	1	No	
8	Bearing bush Part No 365	1	No	
9	Impellar nut Part No 330	1	No	
10	Washer Part No 410	1	No	
11	Casing ring Part No 190	1	No	
12	Impellar wearing ring Part No 196	1	No	
13	Casing ring Part No 190	1	No	
14	Impellar Shaft sleeve Part No 311	1	No	
15	Bowl rubber bearing Part No 364	1	No	
16	Impellar Shaft Part No.	1	No	
17	O ring Part No 524	1	No	
18	Intermediate shaft sleeve Part No 312	1	No	
19	Transmission bearing Part No. 367	1	No	
20	Muff coupling Part No 346	1	No	
21	Transmission shaft Part No. 184	1	No	
22	Bearing holder Part No. 264	1	No	
23	Distance sleeve Part No. 317	1	No	
24	Throttle bush Part No 362	1	No	
25	Split gland Part No 229	1	No	
26	Thrust bearing housing Part No 247	1	No	
27	Thrust collar Part No 363	1	No	
28	Thrust bearing lid Part No. 279	1	No	
29	Bearing Nut Part No 336	1	No	
30	Lock Nut Part No 336	1	No	
31	Ø1000 mm Rubber Expansion Joint (REJ) of PN 1.6 rating	1	No	
32	Ø1000 mm Non return valve (NRV) of PN 1 rating	1	No	

b) Electrical part (Major Repair Work)

Item No.	Description of Item	Qty.	Unit	Rate
1	Motor bearings			
	7320BECBM	1	No	
	NU230EMC3	1	No	
2	Motor protection relay ABB make, type SPAM 150C	1	No	
3	6.6 KV,249 KVAR,Capacitor Bank	1		
4	6.6 KV, 3 ph,50hz,788 KW,Crompton Greaves make motor rewinding	1	No	
5	415V, 3ph, 50Hz,630A,ACB	1	No	
6	Rubber mat for H.T. Panel	1	Sq.mm	

V) Mhaisal Stage V
a) Mechanical part (Major Repair Work)

Item No.	Description	Qty.	Unit	Rate
I	Supplying of following spares for Kirloskar			
1	Gland sleeve Part No 310	1	No	
2	Ratchet pin with spring Part No 369	1	No	
3	Ratchet cover Part No 474	1	No	
4	Ratchet housing	1	No	
5	Taper roller bearing SKF 29338E	1	No	
6	Strainer Part No 216	1	No	
7	Bell mouth Part No 211	1	No	
8	Bearing bush Part No 365	1	No	
9	Impellar nut Part No 330	1	No	
10	Washer Part No 410	1	No	

11	Casing ring Part No 190	1	No	
12	Impellar wearing ring Part No 196	1	No	
13	Casing ring Part No 190	1	No	
14	Impellar Shaft sleeve Part No 311	1	No	
15	Bowl rubber bearing Part No 364	1	No	
16	Impellar Shaft Part No.	1	No	
17	O ring Part No 524	1	No	
18	Intermediate shaft sleeve Part No 312	1	No	
19	Transmission bearing Part No. 367	1	No	
20	Muff coupling Part No 346	1	No	
21	Transmission shaft Part No. 184	1	No	
22	Bearing holder Part No. 264	1	No	
23	Distance sleeve Part No. 317	1	No	
24	Throttle bush Part No 362	1	No	
25	Split gland Part No 229	1	No	
26	Thrust bearing housing Part No 247	1	No	
27	Thrust collar Part No 363	1	No	
28	Thrust bearing lid Part No. 279	1	No	
29	Bearing Nut Part No 336	1	No	
30	Lock Nut Part No 336	1	No	
31	Ø1200 mm Rubber Expansion Joint (REJ) of PN 1.6 rating	1	No	

b) Electrical part (Major Repair Work)

Item No.	Description of Item	Qty.	Unit	Rate
1	Motor bearings			
	7320BECBM	1	No	
	NU232EMC3	1	No	
2	Motor protection relay ABB make, type SPAM 150C	1	No	
3	6.6 KV, 201 KVAR, Capacitor Bank	1	No	
4	6.6 KV, 3 ph, 50hz, 634 KW, Crompton Greaves make motor rewinding	1	No	
5	415V, 3ph, 50Hz, 630A, ACB	1	No	
6	110V, 30A Float cum Boost type battery charger unit	1	No	
7	Rubber mat for H.T. Panel	1	Sq.mm	

Terms & Conditions.

- 1 The rates quoted should be inclusive of all taxes.
- 2 Necessary experience certificate for such type of works carried out

(M.M.More)
Executive Engineer,
Takari Mechanical & Electrical Division,
Sangli.