

**MAHARASHTRA KRISHNA VALLY DEVELOPMENT CORPORATION PUNE 411011**

(A GOVT. OF MAHARASHTRA UNDERTAKING)

BUDGETORY OFFER NOTICE NO. EE/SECPK/07/2015-16

Budgetary offer invited for the Operation, Repairs, Maintenance and Security work for Takari Pump House St. I to IV 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 Takari Pump House St. I to IV with following specification of pumps**

Takari Stage	I	II	III	IV
Type of Pump	V.T. Pump	V.T. Pump	V.T. Pump	V.T. Pump
Make	Kirloskar	Kirloskar	Kirloskar	WPIL
Model	BHR 95	BHR 95	BHR 115	C 20 TC
H.P.	1786	1786	1212	270
Operating voltage	6.6 KV	6.6 KV	6.6 KV	440 V
No. of working pumps for operation	16	16	3	3

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

Staff per shift	Takari St. I	Takari St. II	Takari St. III	Takari St. IV
Pump operator	1	1	1	1
Electrician	1	1	-	-
Fitter	1	1	-	-
Helper	3	3	1	1

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 machinery for irrigation purpose.

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 Over head surge tank / Air vessel and allied componants.**

Following staff is required for Operation of Over head surge tank / Air vessel and allied componants.

Per shift staff	Mhaisai St. I	Mhaisai St. II	Mhaisai St. III	Mhaisai St. IV	Mhaisai St. V
Fitter	1	1	1	1	1
Helper	4	4	4	4	3

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.

Staff Per shift	Takari St. I	Takari St. II	Takari St. III	Takari St. IV
Mechanic	1	1	1	1
Electrician	1	1	1	1
Fitter	1	1	1	1
Helper	3	3	2	2

The Maintenance and repairs of V.T. Pumps and allied electro mechanical equipment Should be carried out as per the mannuals of manufacturers & as directed by Engineer incharge. The spares required for minor / major repairs should be procure by the contractor at the sanctioned rate of depts.

The following works are also included is 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 recognised security service for 24 hours.

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

E) List of major & Minor spare parts is attached herewith to quote item wise rates

**I) Takari stage I****a)Mechanical part Minor Repairs for**

Sr. No.	Item	Qty.	Unit	Rate
1	Gland packing for pump	1	Kg.	
2	coupling pin with bush	1	No	
3	Ø 1000 mm neoprene gasket having	1	No	
4	Hydraulic cylinder oil seal kit for HOPD	1	No	
5	Hydraulic Cylinder of 1000 mm HOPD valve	1	No	
6	Hydraulic pipes	1	No	
7	Hand pump of hydraulic system of 1000 mm	1	No	
8	NRV 600 mm - 1.6 P.N. Rating	1	No	
9	M. S. Fastener for 200 mm KAV	1	Kg.	
10	seasoned Timber Ball covered with soft	1	No	
11	seasoned Timber Ball covered with soft	1	No	
12	Gasket for 200 mm KAV Valve	1	Set.	
13	Foot valve for cooling pump 150 mm	1	No	
14	Ø 50 mm brass sluice valve for air vent	1	No	
15	Ø 20 mm ball valve for cooling arrangement	1	No	
16	Hydraulic power pack oil seal kit for HOPD	1	No	
17	Pressure gauge 0 to 5 kg	1	No	
18	Ø 20 mm gland packing	1	Kg.	
19	Ratchet cover	1	No	

**b)Electrical part minor repair****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, 160/250 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 100/220 VDC for VC/ VCB	1	No	
11	Tripping coil 100/220 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	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-150C	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 150 sq.mm Copper	1	No	
34	H.T. Cable Termination kit 1x 240 sq.mm Allminium	1	No	
35	Induction lamp ( Highbay type.) 250 W	1	No	
36	Lighting Cable 2.5 sq.mm Copper	1	Mtr	
37	Distribution board with MCB 12 way	1	No	
38	Annunciator (12 window ) fro RCP	1	No	
39	L.T. cable lugs up to 95 sq.mm	1	No	

## II) Takari stage II

### a)Mechanical part Minor Repairs for

Sr. No.	Item	Qty.	Unit	Rate
2	Gland packing for pump	1	No	
3	coupling pin with bush	1	No	
4	Ø 1000 mm neoprene gasket having	1	No	
5	Hydraulic cylinder oil seal kit for HOPD	1	No	
6	Hydraulic Cylinder of 1000 mm HOPD valve	1	No	
7	Hydraulic pipes	1	No	
8	Hand pump of hydraulic system of 1000 mm	1	No	
9	NRV 600 mm - 1.6 P.N. Rating	1	Kg.	
10	M. S. Fastner for 200 mm KAV	1	No	
11	seasoned Timber Ball covered with soft	1	No	
12	seasoned Timber Ball covered with soft	1	Set.	
13	Gasket for 200 mm KAV Valve	1	No	
14	Foot valve for cooling pump 150 mm			
15	Ø 50 mm brass sluice valve for air vent	1	No	
16	Ø 20 mm ball valve for cooling arrangement	1	No	
17	Hydraulic power pack oil seal kit for HOPD	1	No	
18	Pressure gauge 0 to 5 kg	1	No	
19	Ø 20 mm gland packing	1	Kg.	
20	Ratchet cover	1	No	

**b)Electrical part minor repair for****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	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, 160/250 Amp bolted type Motor	1	No	
7	6.6 KV, 60 Amp bolted type Fuse for	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 100/220 VDC for VC/ VCB	1	No	
11	Tripping coil 100/220 VDC for VC/VCB	1	No	
12	Indicating lamps	1	No	
13	Local/Remote control switch with lock of	1	No	
14	Spring return type breaker control switch	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	1	No	
25	Copper Conductor control wire of 2.5	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	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	1	Mtr	
33	H.T. Cable Termination kit 1 x 150	1	No	
34	H.T. Cable Termination kit 1x 240	1	No	
35	Induction lamp ( Highbay type.) 250 W	1	No	
36	Lighting Cable 2.5 sq.mm Copper	1	Mtr	
37	Distribution board with MCB 12 way	1	No	
38	Annunciator (12 window ) fro RCP	1	No	
39	L.T. cable lugs up to 95 sq.mm	1	No	

**III) Takari stage III****a)Mechanical part Minor Repairs for**

Sr. No.	Item	Qty.	Unit	Rate
2	Gland packing for pump	1	No	
3	coupling pin with bush	1	No	
4	Ø 1000 mm neoprene gasket having	1	No	
5	Hydraulic cylinder oil seal kit for HOPD	1	No	
6	Hydraulic Cylinder of 1000 mm HOPD valve	1	No	
7	Hydraulic pipes	1	No	
8	Hand pump of hydraulic system of 1000 mm	1	No	
9	NRV 600 mm - 1.6 P.N. Rating	1	Kg.	
10	M. S. Fastner for 200 mm KAV	1	No	
11	seasoned Timber Ball covered with soft	1	No	
12	seasoned Timber Ball covered with soft	1	Set.	
13	Gasket for 200 mm KAV Valve			
14	Ø 50 mm brass sluice valve for air vent	1	No	
15	Ø 20 mm ball valve for cooling arrangement	1	No	
16	Hydraulic power pack oil seal kit for HOPD	1	No	
17	Pressure gauge 0 to 5 kg	1	No	
18	Ø 20 mm gland packing	1	Kg.	
19	Ratchet cover	1	No	

**b)Electrical part minor repair for****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	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, 160/250 Amp bolted type Motor	1	No	
7	6.6 KV, 60 Amp bolted type Fuse for	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 100/220 VDC for VC/ VCB	1	No	
11	Tripping coil 100/220 VDC for VC/VCB	1	No	
12	Indicating lamps	1	No	
13	Local/Remote control switch with lock of	1	No	
14	Spring return type breaker control switch	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	1	No	
25	Copper Conductor control wire of 2.5	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	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	1	Mtr	
33	H.T. Cable Termination kit 1 x 150	1	No	
34	H.T. Cable Termination kit 1x 240	1	No	
35	Induction lamp ( Highbay type.) 250 W	1	No	
36	Lighting Cable 2.5 sq.mm Copper	1	Mtr	
37	Distribution board with MCB 12 way	1	No	
38	Annunciator (12 window ) fro RCP	1	No	
39	L.T. cable lugs up to 95 sq.mm	1	No	

**IV) Takari stage V****a)Mechanical part Minor Repairs for**

Spares required for minor Repair work				
Sr. No.	Item	Qty.	Unit	Rate
	Gland for Pump	1	kg	
	Gland for KAV	1	kg	
	Packing for KAV	1	kg	

**b)Electrical part minor repair for Takari Stage V****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	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	HRC control fuse base for 2A-16A	1	No	
9	Indicating lamps	1	No	
11	Spring return type breaker control switch	1	No	
12	Vnalog type voltmeter 0-7.2KV	1	No	
13	Voltmeter selector switch of 10A/250V	1	No	
14	Analog type ammeter 0-600A	1	No	

15	Ammeter selector switch of 10A/440V	1	No	
19	Aux. contactor 16 A,415 Volt	1	No	
22	Copper Conductor control wire of 2.5	1	Mtr	
23	Hour Meter, Flush Mounting	1	No	
25	Castrol AP.3 Grease to NDE and DE	1	Kg	
26	Transformer oil	1	Ltr	
27	T-5,1 X 28 Watt Tube Light	1	No	
28	T-5,1 X 28 Watt Light Fitting	1	No	
32	Induction lamp ( Highbay type.) 250 W	1	No	
33	Lighting Cable 2.5 sq.mm Copper	1	Mtr	
34	Distribution board with MCB 12 way	1	No	
36	L.T. cable lugs up to 95 sq.mm	1	No	

**F) List of Minor spare parts is attached herewith to quote item wise rates**

**I) Takari Stage I**

**a)Mechanical part Minor Repairs for**

No	Spares required for Major Repair work	Qty.	Unit	Rate
1	Transmission Bearing	1	No	
2	Bowl Bearing	1	No	
3	" O " Ring	1	Set.	
4	S.S.Fastner of pump & HOPD Valve	1	Kg.	
5	Bush Bearing (Distance sleeve)	1	No	
6	Bush Bearing Bowl	1	No	
7	Muff Coupling	1	No	
8	Line shaft sleeve	1	No	
9	Pump shaft sleeve	1	No	
10	Split collar	1	No	
11	Ratchet pin	1	No	
12	Gland sleeve	1	No	
13	Shims	1	Set.	
14	Thrust Bearing SKF 29344 E	1	No	
15	Rubber Expansion Joint 1000 MM $\phi$	1	No	
16	Ratchet body	1	No	
17	Strainer	1	No	

**b)Electrical part (Major Repair Work)**

No	Spares required for Major Repair work	Qty.	Unit	Rate
1	Motor bearings			
	6034MC3	1	No	
	7326DGM	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,540 KVAR,Capacitor Bank	1		
6	6.6 KV, 3 ph,50hz,1315 KW,Kirloskar make motor rewinding	1	No	
7	415V, 3ph, 50Hz,800A,ACB	1	No	
8	110V,30A Float cum Boost type battery charger unit	1	No	
9	Rubber mat for H.T. Panel	1	Sq.mm	

**II) Takari Stage II**

**a)Mechanical part Minor Repairs for**

No	Spares required for Major Repair work	Qty.	Unit	Rate
1	Transmission Bearing	1	No	
2	Bowl Bearing	1	No	
3	" O " Ring	1	Set.	
4	S.S.Fastner of pump & HOPD Valve	1	Kg.	
5	Bush Bearing (Distance sleeve)	1	No	

6	Bush Bearing Bowl	1	No	
7	Muff Coupling	1	No	
8	Line shaft sleeve	1	No	
9	Pump shaft sleeve	1	No	
10	Split collar	1	No	
11	Ratchet pin	1	No	
12	Gland sleeve	1	No	
13	Shims	1	Set.	
14	Thrust Bearing SKF 29344 E	1	No	
15	Rubber Expansion Joint 1000 MM $\phi$	1	No	
16	Ratchet body	1	No	
17	Strainer	1	No	
18	NRV 600 mm - 1.6 P.N. Rating	1	No	
19	D. S. L. for E. O. T. Crane	1	mtr	

**b) Electrical part (Major Repair Work)**

No	Spares required for Major Repair work	Qty.	Unit	Rate
1	Motor bearings			
	6034MC3	1	No	
	7326DGM	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,540 KVAR,Capacitor Bank	1		
6	6.6 KV, 3 ph,50hz,1315 KW,Kirloskar make motor rewinding	1	No	
8	415V, 3ph, 50Hz,800A,ACB	1	No	
9	110V,30A Float cum Boost type battery charger unit	1	No	
10	Rubber mat for H.T. Panel	1	Sq.mm	

**III) Takari Stage III**

**a) Mechanical part Minor Repairs for**

No	Spares required for Major Repair work	Qty.	Unit	Rate
2	Transmission Bearing	1	No	
3	Bowl Bearing	1	Set.	
4	" O " Ring	1	Kg.	
5	S.S.Fastner of pump & HOPD Valve	1	No	
6	Bush Bearing (Distance sleeve)	1	No	
7	Bush Bearing Bowl	1	No	
8	Muff Coupling	1	No	
9	Line shaft sleeve	1	No	
10	Pump shaft sleeve	1	No	
11	Split collar	1	No	
12	Ratchet pin	1	No	
13	Gland sleeve	1	Set.	
14	Shims	1	No	
15	Thrust Bearing SKF	1	No	
16	Rubber Expansion Joint 1000 MM $\phi$	1	No	
17	Ratchet body	1	No	
18	Strainer			



**b) Electrical part (Major Repair Work)**

No	Spares required for Major Repair work	Qty.	Unit	Rate
1	Motor bearings			
	6232MC3	1	No	
	7326DGM	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,265 KVAR,Capacitor Bank	1		
5	6.6 KV, 3 ph,50hz,1005 KW BHEL make motor rewinding	1	No	
6	415V, 3ph, 50Hz,630A,ACB	1	No	
7	Rubber mat for H.T. Panel	1	Sq.mm	

**IV) Takari Stage IV****a) Mechanical part Minor Repairs**

	Spares required for Major Repair work	1	No	
1	Impeller ASPM A 743, CA- 15	1	No	
	Casing - IS 210	1	No	
	Impeller Wearing Rings IS-305	1	No	
	Belmouth IS-210	1	No	
	Strainer IS-2062	1	No	
	Line Shaft En-8 ..... 43 mm	1	No	
	Pump Shaft ASTM A-276	1	No	
	Shaft Sleeves AISI 410	1	No	
	Shaft Bearing IS-312	1	No	
	Shaft Coupling EN-8	1	No	
	Flexible coupling	1	No	

**b) Electrical part (Major Repair Work)**

No	Spares required for Major Repair work	Qty.	Unit	Rate
1	Motor bearings			
	DE29330E	1	No	
	NDE6321	1	No	
2	L.T.54 KVAR,Capacitor Bank	1	No	
3	415V, 3ph, 50Hz,630A,Conactor	1	No	
4	415V, 3ph, 50Hz,800A,ACB	1	No	
5	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 should be submitted.

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