

M/s Indian Strategic Petroleum Reserves Limited, Visakhapatnam

ANNUAL RATE CONTRACT (ARC) ON MECHANICAL MAINTENANCE JOBS: PROPOSED ITEMS FOR 1 YEAR

Sr.No	Work	Work Description and Job Scope	Proposed quantities for 1 year	UOM	Unit rate	Total Cost	Remarks
1) Rotary Equipment Overhauling Jobs:							
1.1	Pump Alignment (up to 25 hp)	The job includes alignment of pump-motor shaft with the provided coupling by dial gauge method and noting the readings before and after the alignment. The alignment should be as per the OEM/OISD standards. Shims have to be provided by the contractor.	10	Each	₹ 4,260.41	₹ 42,604.10	Job on need base
1.2	Pump Alignment (>25 hp- 100 hp)	The job includes alignment of pump-motor shaft with the provided coupling by dial gauge method and noting the readings before and after the alignment. The alignment should be as per the OEM/OISD standards. Shims have to be provided by the contractor.	6	Each	₹ 7,209.51	₹ 43,257.06	Job on need base
1.3	Gland packing 1" to 6"	The job includes the replacement of gland packing on the water line valves. The valve size will be 1" to 6". The material will be provided by ISPRL.	20	Each	₹ 88.55	₹ 1,771.00	Job on need base
1.4	Gland packing 8" to 12"	The job includes the replacement of gland packing on the fire water line valves. The valve size will be 8" to 12". The material will be provided by ISPRL.	21	Each	₹ 351.12	₹ 7,373.52	Job on need base
1.5	Bearing change in board (1 - 50 hp)	The job includes replacement of inboard bearing of the motor/pump having rating between 1-50hp.	15	Each	₹ 6,400.24	₹ 96,003.60	Job on need base
1.6	Bearing change in board (>50-100 hp)	The job includes replacement of inboard bearing of the motor/pump having rating between 50 - 100 hp.	5	Each	₹ 8,493.10	₹ 42,465.50	Job on need base
1.7	Bearing change out board (1 - 25hp)	The job includes replacement of outboard bearing of the motor/pump having rating between 1-25hp.	15	Each	₹ 3,197.04	₹ 47,955.60	Job on need base
1.8	Bearing change out board (>25-100 hp)	The job includes replacement of outboard bearing of the motor/pump having rating between 25 - 100 hp.	5	Each	₹ 6,400.24	₹ 32,001.20	Job on need base
1.9	Fixing of valves 3" to 8"	Loading, transportation, handling, erection and fixing of the ISPRL supplied CS or CI Gate Valves/Butterfly valves/ Gear Operating Valve/Plug Valve /MOV /Non-Return Valve/Hammer Blind Valve/'T' Strainers of sizes 3" to 8" from owners store, including alignment, supplying & fixing of 2 mm thick CAF oil permeate gasket(of approved make & rating) conforming to IS 2712 on either side, supply & fixing all stud & bolts (conforming to ASTM A 193 B7 & A194 2H) of approved make & correct size & dia with washers etc., supply & fixing 2 nos.10 SWG copper wire(on each flange joint) on both sides of valve (connected to flange). includes welding of ISPRL supplied flanges on both sides for fixing of valves etc. complete.	5	Each	₹ 1,540.00	₹ 7,700.00	Job on need base
1.10	Fixing of valves 10" to 16"	Loading, transportation, handling, erection and fixing of the ISPRL supplied CS or CI Gate Valves/Butterfly valves/ Gear Operating Valve/Plug Valve /MOV /Non-Return Valve/Hammer Blind Valve/'T' Strainers of sizes 3" to 8" from owners store, including alignment, supplying & fixing of 2 mm thick CAF oil permeate gasket(of approved make & rating) conforming to IS 2712 on either side, supply & fixing all stud & bolts (conforming to ASTM A 193 B7 & A194 2H) of approved make & correct size & dia with washers etc., supply & fixing 2 nos.10 SWG copper wire(on each flange joint) on both sides of valve (connected to flange). includes welding of ISPRL supplied flanges on both sides for fixing of valves etc. complete.	5	Each	₹ 4,466.00	₹ 22,330.00	Job on need base

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1.11	Fixing of valves 18" to 24"	Loading, transportation, handling, erection and fixing of the ISPRL supplied CS or CI Gate Valves/Butterfly valves/ Gear Operating Valve/Plug Valve /MOV /Non-Return Valve/Hammer Blind Valve/'T' Strainers of sizes 3" to 8" from owners store, including alignment, supplying & fixing of 2 mm thick CAF oil permeate gasket(of approved make & rating) conforming to IS 2712 on either side, supply & fixing all stud & bolts (conforming to ASTM A 193 B7 & A194 2H) of approved make & correct size & dia with washers etc., supply & fixing 2 nos.10 SWG copper wire(on each flange joint) on both sides of valve (connected to flange). includes welding of ISPRL supplied flanges on both sides for fixing of valves etc. complete.	5	Each	₹ 6,937.70	₹ 34,688.50	Job on need base
1.12	Servicing of valve	Removal of damaged valve 2" to 8" and put the boiler maker on both flange ends with proper gasket. Valve dismantling , cleaning, repairing and fixed back. Ensure leak test.	45	Each	₹ 1,540.00	₹ 69,300.00	Job on need base
1.13	Servicing of valve	Removal of damaged valve 10" to 16" and put the boiler maker on both flange ends with proper gasket. Valve dismantling , cleaning, repairing and fixed back. Ensure leak test.	20	each	₹ 5,005.00	₹ 1,00,100.00	Job on need base
1.14	Servicing of valve	Removal of damaged valve 18" to 24" and put the boiler maker on both flange ends with proper gasket. Valve dismantling , cleaning, repairing and fixed back. Ensure leak test.	10	each	₹ 6,006.00	₹ 60,060.00	Job on need base
1.15	Replacement of valve 3" to 6"	The job includes the replacement of valve by dismantling the old valve, removing the old gaskets, replacing the same with new valves and new gaskets, shifting the old valve to the warehouse and checking for leaks as per the directions of the Job incharge.	20	each	₹ 962.50	₹ 19,250.00	Job on need base
1.16	Replacement of valve 8" to 12"	The job includes the replacement of valve by dismantling the old valve, removing the old gaskets, replacing the same with new valves and new gaskets, shifting the old valve to the warehouse and checking for leaks as per the directions of the Job incharge.	12	Each	₹ 1,540.00	₹ 18,480.00	Job on need base
1.17	Replacement of valve 14" to 24"	The job includes the replacement of valve by dismantling the old valve, removing the old gaskets, replacing the same with new valves and new gaskets, shifting the old valve to the warehouse and checking for leaks as per the directions of the Job incharge.	5	Each	₹ 2,695.00	₹ 13,475.00	Job on need base
1.18	Overhauling of injection pump gear box up to 5 hp	De couple the pump from the drive. 2. Remove the Main oil pump (if installed on the gearbox) 3. Remove the top cover of the gearbox. Remove the gears, journal bearings. Clean all the components including housing, nozzles and journals etc. 4. In case of gears replacement, remove the coupling hubs / sprockets and fix the same on the new gear assembly. 5. Assemble with old/new bearings and then install the gear assembly. 6. Check for contact of the bearing area. For achieving the uniform & proper contact carry out blue checking and scrapping of high spots. 7. Check the housing clearances with respect to the bearings and make up the clearances by using shims. 9. Check the backlash and gear meshing by blue matching. 10. Check the axial play before and after boxing up the top cover and correct if any difference is there. Axial play should be as specified by the job engineer.11.Fix the top cover and ensure free rotation. 12. Check & adjust in case of Lube oil pressure and also ensure proper oil jet thru -the nozzles. 13.Check the alignment and correct if necessary. 14. Couple the gearbox with drive and hand over the same.	3	Each	₹ 4,024.02	₹ 12,072.06	Job on need base

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1.19	Overhauling of injection pump gear box above 5 hp	De couple the pump from the drive. 2. Remove the Main oil pump (if installed on the gearbox) 3. Remove the top cover of the gearbox. Remove the gears, journal bearings. Clean all the components including housing, nozzles and journals etc. 4. In case of gears replacement, remove the coupling hubs / sprockets and fix the same on the new gear assembly. 5. Assemble with old/new bearings and then install the gear assembly. 6. Check for at-least 70 - 80% contact of the bearing area. For achieving the uniform & proper contact carry out blue checking and scrapping of high spots. 7. Check the housing clearances with respect to the bearings and make up the clearances by using shims. 9. Check the backlash and gear meshing by blue matching. 10. Check the axial play before and after boxing up the top cover and correct if any difference is there. Axial play should be as specified.* the job engineer.11. Fix the top cover and ensure free rotation. 12. Check & adjust in case of Lube oil pressure and also ensure proper oil jet thru -the nozzles. 13. Check the alignment and correct if necessary. 14. Couple the gearbox with drive and hand over the same.	3	Each	₹ 4,831.75	₹ 14,495.25	Job on need base
1.20	overhauling of injection pump liquid end up to 5 hp	De couple the pump from the drive. 2. Remove the Main oil pump (if installed on the gearbox) 3. Remove the top cover of the gearbox. Remove the gears, journal bearings. Clean all the components including housing, nozzles and journals etc. 4. In case of gears replacement, remove the coupling hubs / sprockets and fix the same on the new gear assembly. 5. Assemble with old/new bearings and then install the gear assembly. 6. Check for contact of the bearing area. For achieving the uniform & proper contact carry out blue checking and scrapping of high spots. 7. Check the housing clearances with respect to the bearings and make up the clearances by using shims. 9. Check the backlash and gear meshing by blue matching. 10. Check the axial play before and after boxing up the top cover and correct if any difference is there. Axial play should be as specified.* the job engineer.11. Fix the top cover and ensure free rotation. 12. Check & adjust in case of Lube oil pressure and also ensure proper oil jet thru -the nozzles. 13. Check the alignment and correct if necessary. 14. Couple the gearbox with drive and hand over the same.	3	Each	₹ 1,776.39	₹ 5,329.17	Job on need base
1.21	overhauling of injection pump liquid end above 5 hp	De couple the pump from the drive. 2. Remove the Main oil pump (if installed on the gearbox) 3. Remove the top cover of the gearbox. Remove the gears, journal bearings. Clean all the components including housing, nozzles and journals etc. 4. In case of gears replacement, remove the coupling hubs / sprockets and fix the same on the new gear assembly. 5. Assemble with old/new bearings and then install the gear assembly. 6. Check for contact of the bearing area. For achieving the uniform & proper contact carry out blue checking and scrapping of high spots. 7. Check the housing clearances with respect to the bearings and make up the clearances by using shims. 9. Check the backlash and gear meshing by blue matching. 10. Check the axial play before and after boxing up the top cover and correct if any difference is there. Axial play should be as specified.* the job engineer.11. Fix the top cover and ensure free rotation. 12. Check & adjust in case of Lube oil pressure and also ensure proper oil jet thru -the nozzles. 13. Check the alignment and correct if necessary. 14. Couple the gearbox with drive and hand over the same.	2	Each	₹ 2,131.36	₹ 4,262.72	Job on need base

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1.22	Overhauling of BPO pump, up to 50hp Mechanical Seal including Bearing replacement	1. After power isolation, de-couple the pump. Remove the pump along with casing and shift the pump to workshop. 2. Carry out dismantling and inspect all the components of the Back Pullout Pump, In case of any damage of Impeller wear ring, Stuffing box cover wear ring, Case wear ring, the same is to be replaced as per Job engineer's advice. 3. Replace the worn-out / damaged components as advised by the Job engineer. 4. Carry out checking of all the critical clearances and interference's between various components. 5. After identifying the re-usable mechanical seal components, carry out mechanical seal assembly using old & new seal components. 6. Carry out assembly of the pump including bearings replacement with new ones. 7. Install the Blinds on suction, discharge & other inlet & outlet connections of the pump & then carryout Pump Hydro test. 8. Shift the pump along with the casing to the specified unit and then carryout installation 8, alignment activity. 9. Couple up the pump & motor. 10. After power release, carry out pump commissioning.	4	Each	₹ 21,530.74	₹ 86,122.96	Job on need base
1.23	Overhauling of BPO pump, above 50hp up to 100 hp, Mechanical Seal including Bearing replacement	1. After power isolation, de-couple the pump. Remove the pump along with casing and shift the pump to workshop. 2. Carry out dismantling and inspect all the components of the Back Pullout Pump, In case of any damage of Impeller wear ring, Stuffing box cover wear ring, Case wear ring, the same is to be replaced as per Job engineer's advice. 3. Replace the worn-out / damaged components as advised by the Job engineer. 4. Carry out checking of all the critical clearances and interference's between various components. 5. After identifying the re-usable mechanical seal components, carry out mechanical seal assembly using old & new seal components. 6. Carry out assembly of the pump including bearings replacement with new ones. 7. Install the Blinds on suction, discharge & other inlet & outlet connections of the pump & then carryout Pump Hydro test. 8. Shift the pump along with the casing to the specified unit and then carryout installation 8, alignment activity. 9. Couple up the pump & motor. 10. After power release, carry out pump commissioning.	3	Each	₹ 25,848.90	₹ 77,546.70	Job on need base
1.24	Overhauling of BPO pump, above 100hp Mechanical Seal including Bearing replacement	1. After power isolation, de-couple the pump. Remove the pump along with casing and shift the pump to workshop. 2. Carry out dismantling and inspect all the components of the Back Pullout Pump, In case of any damage of Impeller wear ring, Stuffing box cover wear ring, Case wear ring, the same is to be replaced as per Job engineer's advice. 3. Replace the worn-out / damaged components as advised by the Job engineer. 4. Carry out checking of all the critical clearances and interference's between various components. 5. After identifying the re-usable mechanical seal components, carry out mechanical seal assembly using old & new seal components. 6. Carry out assembly of the pump including bearings replacement with new ones. 7. Install the Blinds on suction, discharge & other inlet & outlet connections of the pump & then carryout Pump Hydro test. 8. Shift the pump along with the casing to the specified unit and then carryout installation 8, alignment activity. 9. Couple up the pump & motor. 10. After power release, carry out pump commissioning.	2	Each	₹ 19,736.64	₹ 39,473.28	Job on need base

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1.25	Overhauling of BPO pump, up to 50hp Mechanical Seal with out Bearing replacement	1. After power isolation, de-couple the pump. Remove the pump along with casing and shift the pump to workshop. 2. Carry out dismantling and inspect all the components of the Back Pullout Pump, In case of any damage of Impeller wear ring, Stuffing box cover wear ring, Case wear ring, the same is to be replaced as per Job engineer's advice. 3. Replace the worn-out / damaged components as advised by the Job engineer. 4. Carry out checking of all the critical clearances and interference's between various components. 5. After identifying the re-usable mechanical seal components, carry out mechanical seal assembly using old & new seal components. 6. Carry out assembly of the pump including bearings replacement with new ones. 7. Install the Blinds on suction, discharge & other inlet & outlet connections of the pump & then carryout Pump Hydro test. 8. Shift the pump along with the casing to the specified unit and then carryout installation 8, alignment activity. 9. Couple up the pump & motor. 10. After power release, carry out pump commissioning.	2	Each	₹ 19,736.64	₹ 39,473.28	Job on need base
1.26	Overhauling of BPO pump, above 50hp up to 100 hp, Mechanical Seal with out Bearing replacement	1. After power isolation, de-couple the pump. Remove the pump along with casing and shift the pump to workshop. 2. Carry out dismantling and inspect all the components of the Back Pullout Pump, In case of any damage of Impeller wear ring, Stuffing box cover wear ring, Case wear ring, the same is to be replaced as per Job engineer's advice. 3. Replace the worn-out / damaged components as advised by the Job engineer. 4. Carry out checking of all the critical clearances and interference's between various components. 5. After identifying the re-usable mechanical seal components, carry out mechanical seal assembly using old & new seal components. 6. Carry out assembly of the pump. 7. Install the Blinds on suction, discharge & other inlet & outlet connections of the pump & then carryout Pump Hydro test. 8. Shift the pump along with the casing to the specified unit and then carryout installation 8, alignment activity. 9. Couple up the pump & motor. 10. After power release, carry out pump commissioning.	2	Each	₹ 23,966.25	₹ 47,932.50	Job on need base
1.27	Overhauling of BPO pump, above 100hp Mechanical Seal with out Bearing replacement	1. After power isolation, de-couple the pump. Remove the pump along with casing and shift the pump to workshop. 2. Carry out dismantling and inspect all the components of the Back Pullout Pump, In case of any damage of Impeller wear ring, Stuffing box cover wear ring, Case wear ring, the same is to be replaced as per Job engineer's advice. 3. Replace the worn-out / damaged components as advised by the Job engineer. 4. Carry out checking of all the critical clearances and interference's between various components. 5. After identifying the re-usable mechanical seal components, carry out mechanical seal assembly using old & new seal components. 6. Carry out assembly of the pump. 7. Install the Blinds on suction, discharge & other inlet & outlet connections of the pump & then carryout Pump Hydro test. 8. Shift the pump along with the casing to the specified unit and then carryout installation 8, alignment activity. 9. Couple up the pump & motor. 10. After power release, carry out pump commissioning.	1	Each	₹ 28,195.09	₹ 28,195.09	Job on need base
1.28	Overhauling of BPO pump, up to 50hp installed with gland packing including Bearing replacement	1. After power isolation, de-couple the pump. Remove the pump along with casing and shift the pump to workshop. 2. Carry out dismantling and inspect all the components of the Back Pullout Pump, In case of any damage of Impeller wear ring, Stuffing box cover wear ring, Case wear ring, the same is to be replaced as per Job engineer's advice. 3. Replace the worn-out / damaged components as advised by the Job engineer. 4. Carry out checking of all the critical clearances and interference's between various components. 5. Carry out assembly of the pump. 6. Install the Blinds on suction, discharge & other inlet & outlet connections of the pump & then carryout Pump Hydro test. 7. Shift the pump along with the casing to the specified unit and then carryout installation, alignment activity. 8. Couple up the pump & motor. 9. After power release, carry out pump commissioning.	3	Each	₹ 17,103.24	₹ 51,309.72	Job on need base

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1.29	Overhauling of BPO pump, above 50hp up to 100 hp installed with gland packing including Bearing replacement	1. After power isolation, de-couple the pump. Remove the pump along with casing and shift the pump to workshop. 2. Carry out dismantling and inspect all the components of the Back Pullout Pump, In case of any damage of Impeller wear ring, Stuffing box cover wear ring, Case wear ring, the same is to be replaced as per Job engineer's advice. 3. Replace the worn-out / damaged components as advised by the Job engineer. 4. Carry out checking of all the critical clearances and interference's between various components. 5. Carry out assembly of the pump. 6. Install the Blinds on suction, discharge & other inlet & outlet connections of the pump & then carryout Pump Hydro test. 7. Shift the pump along with the casing to the specified unit and then carryout installation, alignment activity. 8. Couple up the pump & motor. 9. After power release, carry out pump commissioning.	2	Each	₹ 21,003.29	₹ 42,006.58	Job on need base
1.30	Overhauling of BPO pump, above 100 hp installed with gland packing including Bearing replacement	1. After power isolation, de-couple the pump. Remove the pump along with casing and shift the pump to workshop. 2. Carry out dismantling and inspect all the components of the Back Pullout Pump, In case of any damage of Impeller wear ring, Stuffing box cover wear ring, Case wear ring, the same is to be replaced as per Job engineer's advice. 3. Replace the worn-out / damaged components as advised by the Job engineer. 4. Carry out checking of all the critical clearances and interference's between various components. 5. Carry out assembly of the pump. 6. Install the Blinds on suction, discharge & other inlet & outlet connections of the pump & then carryout Pump Hydro test. 7. Shift the pump along with the casing to the specified unit and then carryout installation, alignment activity. 8. Couple up the pump & motor. 9. After power release, carry out pump commissioning.	1	Each	₹ 24,095.61	₹ 24,095.61	Job on need base
1.31	Overhauling of BPO pump, up to 50hp installed with gland packing with out Bearing replacement	1. After power isolation, de-couple the pump. Remove the pump along with casing and shift the pump to workshop. 2. Carry out dismantling and inspect all the components of the Back Pullout Pump, In case of any damage of Impeller wear ring, Stuffing box cover wear ring, Case wear ring, the same is to be replaced as per Job engineer's advice. 3. Replace the worn-out / damaged components as advised by the Job engineer. 4. Carry out checking of all the critical clearances and interference's between various components. 5. Carry out assembly of the pump. 6. Install the Blinds on suction, discharge & other inlet & outlet connections of the pump & then carryout Pump Hydro test. 7. Shift the pump along with the casing to the specified unit and then carryout installation, alignment activity. 8. Couple up the pump & motor. 9. After power release, carry out pump commissioning.	4	Each	₹ 14,615.37	₹ 58,461.48	Job on need base
1.32	Overhauling of BPO pump, above 50hp up to 100 hp installed with gland packing with out Bearing replacement	1. After power isolation, de-couple the pump. Remove the pump along with casing and shift the pump to workshop. 2. Carry out dismantling and inspect all the components of the Back Pullout Pump, In case of any damage of Impeller wear ring, Stuffing box cover wear ring, Case wear ring, the same is to be replaced as per Job engineer's advice. 3. Replace the worn-out / damaged components as advised by the Job engineer. 4. Carry out checking of all the critical clearances and interference's between various components. 5. Carry out assembly of the pump. 6. Install the Blinds on suction, discharge & other inlet & outlet connections of the pump & then carryout Pump Hydro test. 7. Shift the pump along with the casing to the specified unit and then carryout installation, alignment activity. 8. Couple up the pump & motor. 9. After power release, carry out pump commissioning.	3	Each	₹ 18,345.25	₹ 55,035.75	Job on need base

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1.33	Overhauling of BPO pump, above 100 hp installed with gland packing with out Bearing replacement	1. After power isolation, de-couple the pump. Remove the pump along with casing and shift the pump to workshop. 2. Carry out dismantling and inspect all the components of the Back Pullout Pump, In case of any damage of Impeller wear ring, Stuffing box cover wear ring, Case wear ring, the same is to be replaced as per Job engineer's advice. 3. Replace the worn-out / damaged components as advised by the Job engineer. 4. Carry out checking of all the critical clearances and interference's between various components. 5. Carry out assembly of the pump. 6. Install the Blinds on suction, discharge & other inlet & outlet connections of the pump & then carryout Pump Hydro test. 7. Shift the pump along with the casing to the specified unit and then carryout installation, alignment activity. 8. Couple up the pump & motor. 9. After power release, carry out pump commissioning.	1	Each	₹ 21,221.20	₹ 21,221.20	Job on need base
1.34	Freeing up of Suction or Discharge vane assembly for FD fans	Ensure 100% working condition and applying lubricants and if require bearing replacement is under Agency scope. Bearing to be supplied by ISPRL.	2	Each	₹ 1,537.69	₹ 3,075.38	Job on need base
1.35	Complete Overhauling FD / ID Fan (0to 50hp),	1. After electrical & process isolation, de-couple the fan from the drive. 2. Drop the suction /discharge vane assembly. 3. Dismantle the required bearing housing covers / Plummer block cover. 4. Dismantle the casing top duct portion to facilitate removal of the fan rotor assembly. 5. Carryout removal of the fan rotor assembly and shift the same to workshop. 6. Carryout fan cleaning and inspect the shaft condition. Remove the old bearings using puller arrangement. 7. Carryout balancing of the fan along with rotor on the Balancing machine. 8. In case of requirement for the fan impeller replacement, retrieve the old fen from the rotor and then assemble the new fan on the rotor. 9. Assemble the fan shaft using new bearings. Re-use / replace the felt gasket on the bearing housings. 10. Shift the fan along with the rotor to site and install the fan in position. 11. Assemble the fan with the bearing housings. 12. Re-install the casing covers of the fan. Carryout alignment & couple up the fan with the drive motor. 13. After power release carryout commissioning activities.	2	Each	₹ 28,054.95	₹ 56,109.90	Job on need base
1.36	Complete Overhauling FD / ID Fan (50 to 100hp)	1. After electrical & process isolation, de-couple the fan from the drive. 2. Drop the suction /discharge vane assembly. 3. Dismantle the required bearing housing covers / Plummer block cover. 4. Dismantle the casing top duct portion to facilitate removal of the fan rotor assembly. 5. Carryout removal of the fan rotor assembly and shift the same to workshop. 6. Carryout fan cleaning and inspect the shaft condition. Remove the old bearings using puller arrangement. 7. Carryout balancing of the fan along with rotor on the Balancing machine. 8. In case of requirement for the fan impeller replacement, retrieve the old fen from the rotor and then assemble the new fan on the rotor. 9. Assemble the fan shaft using new bearings. Re-use / replace the felt gasket on the bearing housings. 10. Shift the fan along with the rotor to site and install the fan in position. 11. Assemble the fan with the bearing housings. 12. Re-install the casing covers of the fan. Carryout alignment & couple up the fan with the drive motor. 13. After power release carryout commissioning activities.	2	nos	₹ 34,166.44	₹ 68,332.88	need base
1.37	Overhauling of Power cylinder	1. Disconnect the power cylinder from position & shift the same workshop. Provide proper locking arrangement to the damper arrangement (in case of FD/ ID Fans). 2. Dismantle the power cylinder & inspect the internal components like piston, O-rings, piston rings faulty spares to be replaced. 3. Replace the damaged with new components & assemble the cylinder. Remove minor bends of the piston rod (if any). 4. Prove clear the inlet & outlet ports of the cylinder. 5. Carryout air test at workshop for smooth movement of the power cylinder piston rod. 6. Shift the cylinder to site & couple up with the parent equipment. Carryout commissioning activities. 7. All consumables like o rings, piston rings, is in the scope of vendor.	3	Each	₹ 3,692.15	₹ 11,076.45	Job on need base

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1.38	Complete Overhauling of Tank Mixer Gearbox	1. After electrical isolation & cable disconnection, de-couple the motor. 2. Dismantle the gear box and check for damaged gears. 3. After proper clearance from job engineer replace the damaged parts if any. 4. After proper cleaning & lapping of the end cover mating surfaces, carry out replacement of bearing using bearing impact tools or bearing induction heater. 5. Lubricate the gear box. 6.. Install the gearbox at site and carry out alignment and couple up. 7. After cable connection & power release, carry out motor commissioning activities.	1	Each	₹ 11,550.00	₹ 11,550.00	Job on need base
1.39	Removal or installation of bore well pump:	Open well pumps and dewatering pumps up to 2 hp pumps repairing and re fixing. Job includes cleaning, repairing and replacement of foot valve.	3	Each	₹ 5,082.00	₹ 15,246.00	Job on need base
1.40	V-Belts Replacement of Rotary Equipment:	Replace the V-belts with new ones and carry out alignment & fix back the belt guard. After power release, take trial run & hand over.	5	Each	₹ 3,624.39	₹ 18,121.95	Job on need base
1.41	Motor/pump broken bolt replacement	Motor/ pump base frame damaged nut & bolts to be replace with new one. Drilling, tapping and welding is included.	20	Each	₹ 1,092.63	₹ 21,852.60	Job on need base
1.42	Motor base frame holes enlargement	Motor/ pump base frame holes enlargement as per advice of job engineer.	65	Each	₹ 728.42	₹ 47,347.30	Job on need base
1.43	Gasket Replacement	The work includes replacement of gaskets from flange joints of any size of pipeline. The job includes dismantling of the flange coupling, collecting of product, cutting and replacing the gasket of adequate size and fixing back the dismantled flange complete in all respects and disposing the collected product as advised by Officer in charge. Gaskets will be supplied by ISPRL. This item shall be executed where only replacement of gasket has been carried out in any pipeline.	200	Inch dia	₹ 26.95	₹ 5,390.00	Job on need base
1.44	Add pack/valve gland leak pull	Replace the valve stem gland pack with new one and ensure the arrest the gland leak.	200	inch dia	₹ 15.40	₹ 3,080.00	Job on need base
1.45	Add packing of gland pack rings to pumps (All HP ranges)	1. After isolation of the equipment, cut the packing rings to required size & carry out add packing of packing rings. 2. No. of packing rings may be more than one depending upon the condition of removed packing rings. 3. After completion of the job, pressure up the pump (i.e. by opening suction & discharge valves) to check for any leaks. 4. Take trial run of the equipment & adjust the gland follower to minimize the leak & also ensure minimum flow thru gland for cooling purpose (i.e. to avoid smoking / leaking gland).	25	nos	₹ 810.81	₹ 20,270.25	Job on need base
1.46	Repacking of gland pack rings to pumps (All HP ranges)	1. After isolation of the equipment, remove the gland follower & all the packing rings. 2. Check the condition of the sleeve, lantern ring & gland follower condition. 3. Cut the packing rings to required size and carry out re-packing of packing rings, fix properly and handover. 4. After completion of the job, pressure up the pump (i.e. by opening suction & discharge valves) to check for any leaks. 5. Take trial run of the equipment & adjust the gland follower to minimize the leak & also ensure minimum flow thru gland for cooling purpose. (i.e. to avoid smoking /leaking gland).	10	nos	₹ 1,412.95	₹ 14,129.50	Job on need base
1.47	Add packing of one injection pump gland (All HP ranges)	1. After isolation of the equipment, cut the packing rings to required size & carry out add packing of packing rings. 2. No. of packing rings may be more than one depending upon the condition of removed packing rings. 3. After completion of the job, pressure up the pump (i.e. by opening suction & discharge valves) to check for any leaks. 4. Take trial run of the equipment & adjust the gland lock nut to minimize the leak & also ensure minimum flow thru gland for cooling purpose.	8	nos	₹ 1,053.36	₹ 8,426.88	Job on need base
1.48	Repacking of one injection pump gland (All HP ranges)	1. After isolation of the equipment, remove the gland lock nut follower & all the packing rings; 2. Check the condition of the plunger & gland lock nut condition; 3. Cut the packing rings to required size and carry out re-packing of packing rings. Fix properly and handover; 4. After completion of the job, pressure up the pump (i.e. by opening suction & discharge valves) to check for any leaks; 5.Take trial run of the equipment & adjust the gland lock nut to minimize the leak & also ensure minimum flow thru gland for cooling purpose.	5	nos	₹ 782.32	₹ 3,911.60	Job on need base

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Sr.No	Work	Work Description and Job Scope	Proposed quantities for 1 year	UOM	Unit rate	Total Cost	Remarks
1.49	Cleaning of injection pump suction strainer (All HP ranges)	1. After isolation of the equipment, disconnect the pump suction discharge lines and remove the valve assembly. 2. Clean the suction discharge valves and re-fix the valve assembly using new gaskets. 3 Carry out suction & discharge valve flange make up. 4. Take trial run of the equipment & hand over to Operations.	8	nos	₹ 1,498.42	₹ 11,987.36	Job on need base
1.50	Replacement of gear box oil seals of injection pump (All HP ranges)	1. After isolation of the equipment, de-couple the injection pump motor and gearbox. 2. Open the gearbox end covers and carryout replacement of Oil seals with new ones. 3. Fix back the gearbox & couple up with the motor. 4. Take trial run of the equipment & hand over to Operations.	10	nos	₹ 1,084.93	₹ 10,849.30	Job on need base
1.51	Replacement of coupling spacer all types, (All HP ranges)	1. After Electrical isolation of the equipment, remove the coupling guard. 2. Drop the coupling spacer and then check the condition of hubs, spider, spacer, membrane element, flexible shim elements etc., for any damage. Replace the damaged component. 3. Check for any misalignment. In case of misalignment, carryout alignment (if necessary) as advised by concerned job engineer. 4. Carry out Greasing in case of gear coupling / grid coupling. 5. Measure the spacer length and distance between shaft ends. Use proper thickness gaskets to obtain desired coupling float. 6. In case of requirement of Motor No-Load checks, agency to inform Job Engineer after dropping the coupling. 7 After completion of electrical checks based on Job Engineer advice, agency to couple up. 8. Install the coupling with correct size fasteners and handover.	5	nos	₹ 2,133.67	₹ 10,668.35	Job on need base
1.52	Replacement of coupling hubs all types, (All HP ranges)	1. After Electrical isolation of the equipment, remove the coupling guard. 2. Drop the coupling spacer and then check the condition of hubs, spider, spacer, membrane element, flexible shim elements etc., for any damage. Remove the old coupling hubs and records the dimensions. After fabrication of the hubs in-line with the dimensions of old hubs, then install the new hubs in position. 3. Check for any misalignment. In case of misalignment, carryout alignment (if necessary) as advised by concerned HPCL job engineer. 4. Carry out Greasing in case of gear coupling / grid coupling. 5. Measure the spacer length and distance between shaft ends. Use proper thickness gaskets to obtain desired coupling float. 6. In case of requirement of Motor No-Load checks, agency to inform Job Engineer after dropping the coupling. 7 After completion of electrical checks based on Job Engineer advice, agency to couple up. 8 Install the coupling with correct size fasteners and handover.	5	nos	₹ 1,981.98	₹ 9,909.90	Job on need base
1.53	Replacement of inboard bearing for centrally mounted pumps (all HP ranges)	1. After electrical isolation, lock mechanical seals on both ends. 2. De-couple the pump and then remove the coupling hub, bearing housing & bearings. 3. Inspect the old bearings & bearing mounting area on the shaft. 4. Replace with new bearings. 5. Carry out assembly of bearing housing & coupling hub.	3	nos	₹ 10,657.57	₹ 31,972.71	Job on need base
1.54	Replacement of outboard bearing for centrally mounted pumps (all HP ranges)	1. After electrical isolation, lock mechanical seals on both ends. 2. De-couple the pump and then remove the coupling hub, bearing housing & bearings. 3. Inspect the old bearings & bearing mounting area on the shaft. 4. Replace with new bearings. 5. Carry out assembly of bearing housing & coupling hub.	3	nos	₹ 6,392.54	₹ 19,177.62	Job on need base
1.55	Replacement of inboard mechanical seal for centrally mounted pumps (all HP ranges)	1. After electrical & process liquid isolation, lock mechanical seals on both ends. 2. De-couple the pump and then remove the coupling hub, bearing housing, bearing S & mechanical seal assembly. 3. Clean & inspect the old bearings, bearing mounting area on the shaft, mechanical seal components. 4. Prove clear all the seal flushing lines & steam quench lines. 5. After identify the re-usable mechanical seal. 6. Replace with new bearings & then carry out assembly of bearing housing & coupling hub. components, carry out mechanical seal assembly using old & new seal components. 7. Check & carryout alignment (if necessary). 8. Release mechanical seal locks & then couple up the pump-shaft. 9. After power release, carry out pump commissioning activities.	2	nos	₹ 21,530.74	₹ 43,061.48	Job on need base

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Sr.No	Work	Work Description and Job Scope	Proposed quantities for 1 year	UOM	Unit rate	Total Cost	Remarks
1.56	Replacement of outboard mechanical seal for centrally mounted pumps (all HP ranges)	1. After electrical & process liquid isolation, lock mechanical seals on both ends. 2. De-couple the pump and then remove the coupling hub, bearing housing, bearing S & mechanical seal assembly. 3. Clean & inspect the old bearings, bearing mounting area on the shaft, mechanical seal components. 4. Prove clear all the seal flushing lines & steam quench lines. 5. After identify the re-usable mechanical seal. 6. Replace with new bearings & then carry out assembly of bearing housing & coupling hub.components, carry out mechanical seal assembly using old & new seal components. 7. Check & carryout alignment (if necessary). 8. Release mechanical seal locks & then couple up the pump-shaft. 9. After power release, carry out pump commissioning activities.	2	nos	₹ 13,841.52	₹ 27,683.04	Job on need base
1.57	Overhauling of centrally mounted pump installed with mechanical seal (upto 50HP)	1. After electrical & process liquid isolation, lock mechanical seals on both ends. De-couple the pump & shift the pump along with casing to workshop. 2. Carry out dismantling of the pump and its components. Inspect all the components of the Pump and in case of any damage of Impeller wear ring or Case wear ring, the same is to be replaced as per Job engineer's advice. 3. Replace the worn-out / damaged components as advised by the Job engineer. 4. Carryout impeller / Rotor balancing as per the Job engineer's advice. 5. Carry out checking of all the critical clearances and interference's between various components. 6. After identifying the re-usable mechanical seal components, carryout pump assembly using with new bearings & mechanical seal assembly. In case of gland packing pump, install new packing rings. 7. Install the Blinds on suction, discharge & other inlet & outlet connections of the pump & then carryout Pump Hydro test. (in case of Mechanical seal pumps). 8. Shift the pump along with the casing to the specified unit. Couple up the pump & motor. Check & carryout alignment. 9. After power release, carry out pump commissioning activities.	2	nos	₹ 27,341.16	₹ 54,682.32	Job on need base
1.58	Overhauling of centrally mounted pump installed with mechanical seal (above 50HP)	1. After electrical & process liquid isolation, lock mechanical seals on both ends. De-couple the pump & shift the pump along with casing to workshop. 2. Carry out dismantling of the pump and its components. Inspect all the components of the Pump and in case of any damage of Impeller wear ring or Case wear ring, the same is to be replaced as per Job engineer's advice. 3. Replace the worn-out / damaged components as advised by the Job engineer. 4. Carryout impeller / Rotor balancing as per the Job engineer's advice. 5. Carry out checking of all the critical clearances and interference's between various components. 6. After identifying the re-usable mechanical seal components, carryout pump assembly using with new bearings & mechanical seal assembly. In case of gland packing pump, install new packing rings. 7. Install the Blinds on suction, discharge & other inlet & outlet connections of the pump & then carryout Pump Hydro test. (in case of Mechanical seal pumps). 8. Shift the pump along with the casing to the specified unit. Couple up the pump & motor. Check & carryout alignment. 9. After power release, carry out pump commissioning activities.	1	nos	₹ 38,277.47	₹ 38,277.47	Job on need base
1.60	Balancing of impeller/ fan/ rotor (upto 50HP)	1. Install the Impeller, blower fan etc. along with the original rotor / fabricated mandrel. Assist the Job engineer for the preparation of mandrel. 2. Record the initial reading at definer RPM. 3. Carryout balancing activity by adding/ removing the mass (by grinding etc.) as per the machine instruction. 4. Remove the impeller/ fan assembly from the machine and shift to the assembly location 5. Transportation & Machinery in ISPRL scope.	3	nos	₹ 3,565.87	₹ 10,697.61	Job on need base

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ANNUAL RATE CONTRACT (ARC) ON MECHANICAL MAINTENANCE JOBS: PROPOSED ITEMS FOR 1 YEAR

Sr.No	Work	Work Description and Job Scope	Proposed quantities for 1 year	UOM	Unit rate	Total Cost	Remarks
1.61	Balancing of impeller/ fan/ rotor (above 50HP)	1. Install the Impeller, blower fan etc. along with the original rotor / fabricated mandrel. Assist the Job engineer for the preparation of mandrel. 2. Record the initial reading at definer RPM. 3. Carryout balancing activity by adding/ removing the mass (by grinding etc.) as per the machine instruction. 4. Remove the impeller/ fan assembly from the machine and shift to the assembly location. 5. Transportation & Machinery in ISPRL scope.	3	nos	₹ 7,134.05	₹ 21,402.15	Job on need base
1.62	Replacement of top thrust ball bearing for vertical pump (upto 50HP)	1. After electrical / steam isolation, de-couple the pump and remove & lift the Motor / Turbine. 2. In case of Turbine, disconnect the inlet & out piping, flushing lines etc. 3. Remove the coupling hub & lock the mechanical seal assembly. 4. Remove the bearing housing and bearing. 5. Clean & inspect the old bearings & bearing mounting area on the shaft. 6. Check & record the radial play of the shaft. 7. Replace with new bearing and accordingly adjust the end play. 8. Assemble the bearing housing & coupling hub. 9. Install the motor! Turbine and then carry out blade alignment if the mounting bracket is not a spigot mounted design. 10. Make No-load trial (if required) & carryout Couple up of the pump with Motor.	5	nos	₹ 4,441.36	₹ 22,206.80	Job on need base
1.63	Replacement of top thrust ball bearing for vertical pump (above 50HP)	1. After electrical / steam isolation, de-couple the pump and remove & lift the Motor / Turbine. 2. In case of Turbine, disconnect the inlet & out piping, flushing lines etc. 3. Remove the coupling hub & lock the mechanical seal assembly. 4. Remove the bearing housing and bearing. 5. Clean & inspect the old bearings & bearing mounting area on the shaft. 6. Check & record the radial play of the shaft. 7. Replace with new bearing and accordingly adjust the end play. 8. Assemble the bearing housing & coupling hub. 9. Install the motor! Turbine and then carry out blade alignment if the mounting bracket is not a spigot mounted design. 10. Make No-load trial (if required) & carryout Couple up of the pump with Motor after power release, carry out pump commissioning activities.	5	nos	₹ 5,186.72	₹ 25,933.60	Job on need base
1.64	Replacement of Mechanical seal for vertical pump (upto 50HP)	1. After electrical isolation, de-couple the pump and remove & lift the Motor. 2. Remove the coupling hub & lock the mechanical seal assembly. 3. Remove the bearing housing and bearing. 4. Clean & inspect the old bearings & bearing mounting area on the shaft. 5. Check & record the radial play of the shaft. 6. Replace with new bearing and accordingly adjust the end play. 7. Assemble the bearing housing & coupling hub. 8. Install the motor! Turbine and then carry out blade alignment if the mounting bracket is not a spigot mounted design. 9. Make No-load trial (if required) & carryout Couple up of the pump with Motor after power release, carry out pump commissioning activities.	2	nos	₹ 8,771.07	₹ 17,542.14	Job on need base
1.65	Replacement of mechanical seal for vertical pump (above 50HP)	1. After electrical isolation, de-couple the pump and remove & lift the Motor. 2. Remove the coupling hub & lock the mechanical seal assembly. 3. Remove the bearing housing and bearing. 4. Clean & inspect the old bearings & bearing mounting area on the shaft. 5. Check & record the radial play of the shaft. 6. Replace with new bearing and accordingly adjust the end play. 7. Assemble the bearing housing & coupling hub. 8. Install the motor! Turbine and then carry out blade alignment if the mounting bracket is not a spigot mounted design. 9. Make No-load trial (if required) & carryout Couple up of the pump with Motor after power release, carry out pump commissioning activities.	2	nos	₹ 10,162.46	₹ 20,324.92	Job on need base

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ANNUAL RATE CONTRACT (ARC) ON MECHANICAL MAINTENANCE JOBS: PROPOSED ITEMS FOR 1 YEAR

Sr.No	Work	Work Description and Job Scope	Proposed quantities for 1 year	UOM	Unit rate	Total Cost	Remarks
1.66	Complete overhauling of vertical pump (up to 50HP)	1. After electrical isolation, de-couple the pump and remove the Motor. 2. Remove the pump using Crane / Hydra & shift the pump to workshop. 3. Carry out dismantling of the pump and its components. Inspect all the components of the Pump and replace the worn-out / damaged components as advised by the Job engineer. 4. Prove clear all the seal flushing lines, steam quench lines & casing drain lines etc. 5. Carry out checking of all the critical clearances and interference's between various components. 6. After identifying the re-usable mechanical seal components, carryout pump assembly using new bearings & mechanical seal assembly. In case of gland packing pump, install new packing rings. 7. Install the Blinds on suction, discharge & other inlet & outlet connections of the pump & then carryout Pump Hydro test. 8. Shift the pump back to the specified unit and install in position. 9. Install the motor and make No-load trial (if required) & carryout Couple up of the pump with Motor. 10 Couple up pump & motor and then carry out blade alignment, if the mounting bracket is not a spigot mounted design. 11 After power release, carry out pump commissioning activities.	5	nos	₹ 39,773.58	₹ 1,98,867.90	Job on need base
1.67	Complete overhauling of vertical pump (above 50HP)	1. After electrical isolation, de-couple the pump and remove the Motor. 2. Remove the pump using Crane / Hydra & shift the pump to workshop. 3. Carry out dismantling of the pump and its components. Inspect all the components of the Pump and replace the worn-out / damaged components as advised by the Job engineer. 4. Prove clear all the seal flushing lines, steam quench lines & casing drain lines etc. 5. Carry out checking of all the critical clearances and interference's between various components. 6. After identifying the re-usable mechanical seal components, carryout pump assembly using new bearings & mechanical seal assembly. In case of gland packing pump, install new packing rings. 7. Install the Blinds on suction, discharge & other inlet & outlet connections of the pump & then carryout Pump Hydro test. 8. Shift the pump back to the specified unit and install in position. 9. Install the motor and make No-load trial (if required) & carryout Couple up of the pump with Motor. 10 Couple up pump & motor and then carry out blade alignment, if the mounting bracket is not a spigot mounted design. 11 After power release, carry out pump commissioning activities.	5	nos	₹ 46,398.66	₹ 2,31,993.30	Job on need base
1.68	Cleaning and removal of hard deposits inside the FD/ID fans (upto 50HP)	1 After electrical & process isolation, open the man cover of the fan casing. 2. Carryout removal of loose deposits on the fan vanes, casing and duct portion. 3. Carryout removal of the hard deposits by using scrappers. 4. Unplug the casing drain and prove clear of the deposits in the drain line. 5. Close the man cover with new / old gasket element.	3	nos	₹ 2,421.65	₹ 7,264.95	Job on need base
1.69	Cleaning and removal of hard deposits inside the FD/ID fans (above 50HP)	1 After electrical & process isolation, open the man cover of the fan casing. 2. Carryout removal of loose deposits on the fan vanes, casing and duct portion. 3. Carryout removal of the hard deposits by using scrappers. 4. Unplug the casing drain and prove clear of the deposits in the drain line. 5. Close the man cover with new / old gasket element.	3	nos	₹ 3,229.38	₹ 9,688.14	Job on need base
1.70	Replacement of FD/ID fan one number bearing (upto 50HP)	1. After electrical & process isolation, de-couple the fan from the drive. 2. Remove the fan drive coupling hub. 3. Dismantle the DE bearing housing covers / Plummer block cover. 4. Remove the bearing using suitable puller arrangement. 5. Check the bearing interference/ loose fit on the shaft & housing and install a new bearing either by impact tools or by induction heater. 6. Re-use / replace the felt gasket on the bearing housing & re-assemble the housing. 7. Re-fix the coupling hub & couple up the fan with the drive. 8. After power release carryout commissioning activities.	4	nos	₹ 7,956.41	₹ 31,825.64	Job on need base

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Sr.No	Work	Work Description and Job Scope	Proposed quantities for 1 year	UOM	Unit rate	Total Cost	Remarks
1.71	Replacement of FD/ID fan one number bearing (above 50HP)	1. After electrical & process isolation, de-couple the fan from the drive. 2. Remove the fan drive coupling hub. 3. Dismantle the DE bearing housing covers / Plummer block cover. 4. Remove the bearing using suitable puller arrangement. 5. Check the bearing interference/ loose fit on the shaft & housing and install a new bearing either by impact tools or by induction heater. 6. Re-use / replace the felt gasket on the bearing housing & re-assemble the housing. 7. Re-fix the coupling hub & couple up the fan with the drive. 8. After power release carryout commissioning activities.	4	nos	₹ 14,586.11	₹ 58,344.44	Job on need base
1.72	Overhauling of tank mixer/ agitator (all HP range)	1. After electrical isolation & cable disconnection, de-couple the motor. 2. Remove the motor base bolts and lift the motor using davit arrangement. Shift the motor manually up to the Forklift approach point. 3. Shift the motor to workshop and carry out dismantling of the motor stator & rotor. Handover the stator for electrical repairs (if any). 4. After extracting the old bearings using puller, carryout balancing of the rotor (as advised by the job engineer). 5. After proper cleaning & lapping of the end cover mating surfaces, carry out replacement of bearing using bearing impact tools or bearing induction heater. 6. After receipt of the stator from electrical section, carryout motor assembly as per procedure. 7. Shift the motor to electrical shop for No-load test run. 8. Shift & install the motor at Tank location. 9. Carryout blade alignment and couple up. 10. After cable connection & power release, carry out motor commissioning activities.	4	nos	₹ 17,040.10	₹ 68,160.40	Job on need base
1.73	Complete overhaul of screw pumps (all HP range)	1. After electrical isolation, remove the coupling guard, de-couple & shift the screw pump to workshop using forklift. 2. Dismantle the screw pump major components like bearings, mechanical seals / gland packing, screws, timing gear arrangement etc. 3. Inspect the removed components and record the observations. Check the clearances of the mating components & carryout lapping of the components. 4. Carryout dummy assembly to check for free rotation (without catchy / sluggish movement) of the screws. 5. After identifying the re-usable components, carry out gearbox assembly using old & new seal components including oil seals, bearings, screws, timing gears, mechanical seal etc. 6. Carryout Hydro test as per the design specifications. 7. After successful hydro test activity, shift the pump using forklift to the unit location & install the same in position. 8. Carryout alignment, couple up & hand over the pump. 9. After power release, carry out commissioning activities.	2	nos	₹ 16,195.41	₹ 32,390.82	Job on need base
1.74	Complete overhaul of twin lobe blowers (all HP range)	1. After electrical isolation; remove the coupling guard, de-couple & shift the blower to workshop using forklift. 2. Dismantle the blower major components like bearings, mechanical seals / gland packing, Lobes, timing gear arrangement etc. 3. Inspect the removed components and record the observations. Check the clearances of the mating components & carryout lapping of the corripnents. 4. Check the clearances between the lobes and lap the lobes up to the desired clearances. 5. Carryout dummy assembly to check for free rotation (without catchy / sluggish movement) of the screws. 6. After identifying the re-usable components, carry out gearbox assembly using old & new seal components including oil seals, bearings, lobes, timing gears, mecha nical seal etc. 7. Shift the Blower using forklift to the unit location & install the same in position. 8. Carryout alignment, couple up & hand over the blower. 9. Afte r power release, carry out commissioning activities.	3	nos	₹ 8,470.00	₹ 25,410.00	Job on need base
1.75	Complete overhaul of centrifuge	1. Disconnect the piping of the centrifuge & shift the centrifuge to workshop. 2. Carryout dismantling of the centrifuge assembly such as bowls assembly, break pad arrangement, Gearbox etc. 3 Clean and inspect the condition of the components such as oil seals, bearings, gears, bowls etc. 4. Assemble the centrifuge components such as bowl assembly, gearbox etc. and shift the same to the plant location. 5. After power release take trial run & handover.	2	nos	₹ 12,711.16	₹ 25,422.32	Job on need base

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Sr.No	Work	Work Description and Job Scope	Proposed quantities for 1 year	UOM	Unit rate	Total Cost	Remarks
1.76	Overhauling of gearbox (upto 50HP)	De couple the gearbox from the drive. (i.e. spacer coupling, chain etc.) 2. Remove the Main oil pump (if installed on the gearbox) 3. Remove the top cover of the gearbox. Remove the gears, journal bearings. Clean all the components including housing, nozzles and journals etc. 4. In case of gears replacement, remove the coupling hubs / sprockets and fix the same on the new gear assembly. 5. Assemble with old/ new bearings and then install the gear assembly. 6. Check for at least 70 - 80% contact of the bearing area. For achieving the uniform & proper contact carry out blue checking and scrapping of high spots. 7. Check the housing clearances with respect to the bearings and make up the clearances by using shims. 9. Check the backlash and gear meshing by blue matching. 10. Check the axial play before and after boxing up the top cover and correct if any difference is there. Axial play should be as specified.* the job engineer.11. Fix the top cover and ensure free rotation. 12. Check & adjust in case of Lube oil pressure and also ensure proper oil jet thru -the nozzles. 13. Check the alignment and correct if necessary. 14. Couple the gearbox with drive and hand over the same.	6	nos	₹ 12,849.76	₹ 77,098.56	Job on need base
1.77	Overhauling of gearbox (above 50HP)	De couple the gearbox from the drive. (i.e. spacer coupling, chain etc.) 2. Remove the Main oil pump (if installed on the gearbox) 3. Remove the top cover of the gearbox. Remove the gears, journal bearings. Clean all the components including housing, nozzles and journals etc. 4. In case of gears replacement, remove the coupling hubs / sprockets and fix the same on the new gear assembly. 5. Assemble with old/ new bearings and then install the gear assembly. 6. Check for at least 70 - 80% contact of the bearing area. For achieving the uniform & proper contact carry out blue checking and scrapping of high spots. 7. Check the housing clearances with respect to the bearings and make up the clearances by using shims. 9. Check the backlash and gear meshing by blue matching. 10. Check the axial play before and after boxing up the top cover and correct if any difference is there. Axial play should be as specified.* the job engineer.11. Fix the top cover and ensure free rotation. 12. Check & adjust in case of Lube oil pressure and also ensure proper oil jet thru -the nozzles. 13. Check the alignment and correct if necessary. 14. Couple the gearbox with drive and hand over the same.	2	nos	₹ 21,416.78	₹ 42,833.56	Job on need base
1.78	compressor suction and discharge valve replacement (2no of valves)	1. After electrical isolation, disconnect all the lines. 2. Remove the valve covers and valves. 3. Clean the valve chamber. 4. install the new valve. 5. Fix the lines. 6. Carry out leak test. 7. Check the performance after start up.	6	nos	₹ 2,002.00	₹ 12,012.00	Job on need base
1.79	All types of pump impeller cleaning (upto 50HP)	1. After electrical isolation, disconnect all the lines. 2. Remove the pump from casing. 3. Dismantle the pump. 4. Clean the impeller and casing cover. 5. Assemble the impeller and pump. 6. Fix the lines. 7. Carry out leak test. 8. Check the performance after start up.	8	nos	₹ 2,845.15	₹ 22,761.20	Job on need base
SUB- TOTAL ON ESTIMATED ROTATORY EQUIPMENT JOBS						₹ 27,94,219.12	

2) Mobile Cranes, Chain pulley blocks, Ropes etc.,

Sr.No	Work	Work Description		UOM	Unit rate (INR)	Total Cost	Remarks
2.1	Servicing of 0.5T to 2T chain pulley block along with mono rail	Maintenance of chain pulley blocks which includes lubrication, ensuring tightness of all nuts and bolts and other maintenance as advised by engineer In charge.(scaffolding in ISPRL scope if required)	32	Each	₹ 356.00	₹ 11,392.00	Considering quarterly checks
2.2	Testing & certification 0.5T to 2T	3rd party inspection, Load test and certification as per factory Acts (arranging weights in ISPRL scope)	8	Each	₹ 3,560.00	₹ 28,480.00	once in a year
2.3	Servicing of 3T to 5T chain pulley block along with mono rail	Maintenance of chain pulley blocks which includes lubrication, ensuring tightness of all nuts and bolts and other maintenance as advised by engineer In charge.(scaffolding in ISPRL scope if required)	28	Each	₹ 462.80	₹ 12,958.40	Considering quarterly checks

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Sr.No	Work	Work Description and Job Scope	Proposed quantities for 1 year	UOM	Unit rate	Total Cost	Remarks
2.4	Testing & certification 3T to 5T	3rd party inspection, Load test and certification as per factory Acts (arranging weights in ISPR scope)	7	Each	₹ 3,916.00	₹ 27,412.00	once in a year
2.5	Servicing of 7.5T chain pulley block along with mono rail	Maintenance of chain pulley blocks which includes lubrication, ensuring tightness of all nuts and bolts and other maintenance as advised by engineer In charge.(scaffolding in ISPR scope if required)	12	Each	₹ 578.50	₹ 6,942.00	Considering quarterly checks
2.6	Testing & certification 7.5T	3rd party inspection, Load test and certification as per factory Acts (arranging weights in ISPR scope)	3	Each	₹ 4,628.00	₹ 13,884.00	once in a year
2.7	Servicing of 0.5T EOT crane along with mono rail	Maintenance of chain pulley blocks which includes lubrication, ensuring tightness of all nuts and bolts and other maintenance as advised by engineer In charge.(scaffolding in ISPR scope if required)	4	Each	₹ 356.00	₹ 1,424.00	Considering quarterly checks
2.8	Testing & certification of 0.5T EOT crane	3rd party inspection, Load test and certification as per factory Acts (arranging weights in ISPR scope)	1	Each	₹ 3,115.00	₹ 3,115.00	once in a year
		SUB- TOTAL ON ESTIMATED JOBS RELATED TO TESTING, CALIBRATION AND CERTIFICATION OF CHAIN PULLY BLOCKS, ROPES AND CRANES				₹ 1,05,607.40	

3) Annual Rate Contracts for Testing of Safety valves and pressure vessels and other equipment

Sr.No	Work	Work Description		UOM	Unit rate (INR)	Total Cost	Remarks
3.1	Calibration of SRVs/TSVs from 0.5 inch to 1.5 inch	Removing, Fixing and Calibration of S.R.V. The Testing shall be done as per the Set Pressure of the Safety Valve. Nitrogen Cylinders required if any for testing is in the scope of contractor only.	81	each	₹ 3,055.00	₹ 2,47,455.00	YEARLY
3.2	Calibration of SRVs/TSVs from above 1.5 inch upto 4 inch	Removing, Fixing and Calibration of S.R.V. The Testing shall be done as per the Set Pressure of the Safety Valve. Nitrogen Cylinders required if any for testing is in the scope of contractor only.	25	each	₹ 3,666.00	₹ 91,650.00	YEARLY
3.3	Calibration of SRVs/TSVs above 4 inch	Removing, Fixing and Calibration of S.R.V. The Testing shall be done as per the Set Pressure of the Safety Valve. Nitrogen Cylinders required if any for testing is in the scope of contractor only.	4	each	₹ 4,559.00	₹ 18,236.00	YEARLY
3.4	Calibration of SRVs/TSVs back pressure test from above 1.5 inch upto 4 inch	Removing, Fixing and Calibration of S.R.V. back pressure test The Testing shall be done as per the Set Pressure of the Safety Valve. Nitrogen Cylinders required if any for testing is in the scope of contractor only.	20	each	₹ 3,666.00	₹ 73,320.00	YEARLY
3.5	Servicing/Repairs of SRVs/TSVs 0.5 inch to 1.5 inch	Repairs of safety relief valves(SRV's) including lapping, machining of sheet and body and leaktest to be carried out (Spares provided by ISPR)	40	each	₹ 5,640.00	₹ 2,25,600.00	need base
3.6	Servicing/Repairs of SRVs/TSVs 1.5 inch to 4 inch	Repairs of safety relief valves(SRV's) including lapping, machining of sheet and body and leaktest to be carried out (Spares provided by ISPR)	15	each	₹ 6,110.00	₹ 91,650.00	need base
3.7	Servicing/Repairs of SRVs /TSVs above 4 inch	Repairs of safety relief valves(SRV's) including lapping, machining of sheet and body and leaktest to be carried out (Spares provided by ISPR)	4	each	₹ 6,768.00	₹ 27,072.00	need base
3.8	Calibration of pressure gauges	Removing, Fixing and Calibration of Pressure gauges providing calibration certificate by authorized agency	300	each	₹ 752.00	₹ 2,25,600.00	need base
3.9	Calibration of pressure transmitters	Removing, Fixing and Calibration of Pressure transmitter providing calibration certificate by authorized agency	120	each	₹ 2,350.00	₹ 2,82,000.00	need base
3.10	Calibration of Flow transmitters	Removing, Fixing and Calibration of Flow transmitter providing calibration certificate by authorized agency	10	each	₹ 2,350.00	₹ 23,500.00	need base
3.11	USM meter dropping and fixing back	USM meter to be dropped by providing blinding and spool piece in the pipeline and same to be fixed back after coming back from calibration. Dropped meter to be transported to the workshop/stores as per the advice of job engineer.	3	each	₹ 9,400.00	₹ 28,200.00	need base
3.12	Thickness gauging of vessels	providing 3rd party inspection and thickness gauging. (insulation removal and scaffolding in ISPR scope if required). The number of inspection points per the standard.	40	each	₹ 1,692.00	₹ 67,680.00	HALF YEARLY

M/s Indian Strategic Petroleum Reserves Limited, Visakhapatnam

ANNUAL RATE CONTRACT (ARC) ON MECHANICAL MAINTENANCE JOBS: PROPOSED ITEMS FOR 1 YEAR

Sr.No	Work	Work Description and Job Scope	Proposed quantities for 1 year	UOM	Unit rate	Total Cost	Remarks
3.13	Thickness gauging of pipelines	providing 3rd party inspection and thickness gauging. (insulation removal and scaffolding in ISPRL scope if required)	10000	each point	₹ 28.20	₹ 2,82,000.00	need base
3.14	Certification as per factories act for vessels, lines and valves	Liasion with competent persons for inspection and certification as per factory Acts	140	each	₹ 1,410.00	₹ 1,97,400.00	YEARLY
3.15	Certification as per PESO	Liasion with competent persons for inspection and certification as per PESO	11	each	₹ 7,520.00	₹ 82,720.00	YEARLY
3.16	Stenciling jobs	Stencil jobs on equipment like pipes, valves, gauges and other equipment	100000	sq inch	₹ 1.18	₹ 1,17,500.00	need base
		SUB- TOTAL ON ESTIMATED JOBS RELATED TO TESTING, CALIBRATION AND CERTIFICATION OF SAFETY VALVES AND PRESSURE VESSELS				₹ 20,81,583.00	

4) Fabrication jobs:

Sr.No	Work	Work Description		UOM	Unit rate (INR)	Total Cost	Remarks
4.1	Structural works	The scope of job includes cutting/welding of structure, edge preparation, fabrication of clamps, sheets, gratings, ladders, dummies etc. as advised by ISPRL job engineer. The job also includes mobilizing the welding machine. The rate is per kg of work done and includes consumable items like welding rods, oxygen, LPG etc. payment shall be done based on the total weight of the structure being erected. Electricity supply shall be given by ISPRL.	5000	kilograms	₹ 37.80	₹ 1,89,000.00	Job on need base
4.2	Butt joint- cs non x ray quality	Fabrication of pipe joints using Butt weld by qualified welder (approved x ray quality welder). All consumables like welding rods, to be supplied by contractor.	200	Inch Dia	₹ 194.40	₹ 38,880.00	-do-
4.3	RF pad CS weld joint using E-6	Fabrication of pipe joints, reinforcement pads by qualified welder (approved welder). All consumables like welding rods, to be supplied by contractor.	30	inch dia	₹ 853.20	₹ 25,596.00	-do-
4.4	Corrosion Pad	Fabrication and providing of corrosion pad.	30	inch dia	₹ 143.10	₹ 4,293.00	-do-
4.5	Fillet Joint-CS using E-6013 W	Fabrication of structural works by qualified welder (approved welder). All consumables like welding rods, to be supplied by contractor.	50	inch Dia	₹ 252.00	₹ 12,600.00	-do-
4.6	Butt joint- cs x ray quality	Fabrication of pipe joints using Butt weld by qualified welder (approved welder). All consumables like welding rods, to be supplied by contractor.	200	Inch Meter	₹ 328.50	₹ 65,700.00	-do-
4.7	Pipe Coat wrapping coat pipe line	As per underground piping specification coating and inspection to be carried out.	50	Sq.mtr	₹ 1,123.20	₹ 56,160.00	-do-
4.8	Fabrication of flanges on pipe line	Fabrication of flange joints in pipe line including cutting and welding.	100	Inch dia	₹ 113.40	₹ 11,340.00	-do-
4.10	Repair / free up of valve	Valve dismantling, cleaning, metal building, machining, lapping and reassembling the valve. Leak to be carried out with rated pressure by the agency	500	Inch Dia	₹ 18.00	₹ 9,000.00	-do-
4.11	Roofing with galvalume sheets	Supplying, transporting & stacking , fixing in position "Galvalume clip on" OR equivalent sheeting of self crimping type as follow with accessories such as Fasteners & Foam filler detailed as under all complete as per instructions of MMCI/ISPRL Engineer-in-Charge FASTNERS: -Mechanically galvanised self drilling high grip screws 12-14 X55 with integral washers. EPDM seals and 10- 12X25 screws at side laps.(not measured for payment) Polyethylene foam filler cut to suit profile at all ends to ensure air tightness. FOAM FILLER: Polyethylene foam filler cut to suit profile at all ends to ensure air tightness. SHEETING:-a) Track deck KLIPPON AZ 150 SMP colour coated (in approved colour) or equivalent profile, suitable for purlin spacing 1.8 m c/c. b) 0.50 mm thick without coating with 0.55 mm total coat thickness. c) 550 MPA yield stress cold Rolled Steel ASTM A446 Grade E) d) Hot dip metallic coating conforming to AZ150 of AS 1397 with hot dip metallic coating of 55% Al and 45% Zn alloy having total coating mass of min 150 gms/m2 inclusive of both sides. 5% of area shall be replaced with translucent sheets. e) Measurement is installed area (net of overlap) f) All overlaps sealed with neutral cured silicon sealants.	200	square meter	₹ 1,278.00	₹ 2,55,600.00	-do-
		SUB- TOTAL ON ESTIMATED JOBS RELATED TO FABRICATION WORKS				₹ 6,68,169.00	

5) Annual Rate Contract on Line leak sealing services

ANNUAL RATE CONTRACT (ARC) ON MECHANICAL MAINTENANCE JOBS: PROPOSED ITEMS FOR 1 YEAR

Sr.No	Work	Work Description and Job Scope	Proposed quantities for 1 year	UOM	Unit rate	Total Cost	Remarks
Sr.No	Work	Work Description		UOM	Unit rate (INR)	Total Cost	Remarks
5.1	Leak Clamp Fabrication	Fabrication and supply of require size of leak clamp with rubber gasket	150	inch dia	₹ 163.76	₹ 24,564.00	need base
5.2	Leak clamp installation	Installation of Fabricated clamp with rubber gasket	150	inch dia	₹ 78.32	₹ 11,748.00	Job on need base
SUB- TOTAL ON ESTIMATED JOBS RELATED TO LEAK SEALING SERVICES						₹ 36,312.00	-do-

6) Operation and Maintenance of Central AC units of Control room, Servicing and Maintenance of Split ACs installed at various locations in the plant per Quarter

Sr.No	Work	Work Description		UOM	Unit rate (INR)	Total Cost	Remarks
6.1	Pressure ventilation system/ air handling unit Duct filters cleaning	PV room and Air handling unit duct grills Filters to be clean periodically as per job engineer requirement.	72	Each	₹ 286.00	₹ 20,592.00	Job on need base
6.2	PM Checks of Split AC's of 1.5Ton	Periodical Preventive maintenance for the each AC unit on quaterly basis, report to be submitted. Wet service of all Air Conditioner Units . Check for refrigerant levels in all air conditioning units. Checking the functioning of compressor and its accessories. Lubricating the bearings of motors and fans. Checking all the electrical panels and PCB Boards. AC drains to be serviced to avoid clogging.	100	Each	₹ 1,144.00	₹ 1,14,400.00	once in a quarter
6.3	PM Checks of Split AC's of 2 Ton	Periodical Preventive maintenance for the each AC unit on quaterly basis, report to be submitted. Wet service of all Air Conditioner Units . Check for refrigerant levels in all air conditioning units. Checking the functioning of compressor and its accessories. Lubricating the bearings of motors and fans. Checking all the electrical panels and PCB Boards.	184	Each	₹ 1,430.00	₹ 2,63,120.00	once in a quarter
6.4	PM Checks of Split AC's of 3 Ton	Periodical Preventive maintenance for the each AC unit on quaterly basis, report to be submitted. Wet service of all Air Conditioner Units . Check for refrigerant levels in all air conditioning units. Checking the functioning of compressor and its accessories. Lubricating the bearings of motors and fans. Checking all the electrical panels and PCB Boards.	12	Each	₹ 3,575.00	₹ 42,900.00	once in a quarter
6.5	PM Checks of 5 Ton HVAC	Periodical Preventive maintenance for the each AC unit on quaterly basis, report to be submitted. Wet service of all Air Conditioner Units . Check for refrigerant levels in all air conditioning units.Checking the functioning of compressor and its accessories. Lubricating the bearings of motors and fans.Checking all the electrical panels and PCB Boards.	4	Each	₹ 7,150.00	₹ 28,600.00	once in a quarter
6.6	PM Checks of 28 Ton AHU	Periodical Preventive maintenance for the each AC unit on quaterly basis by OEM/expert services, report to be submitted. Wet service of all Air Conditioner Units . Check for refrigerant levels in all air conditioning units.Checking the functioning of compressor and its accessories.Lubricating the bearings of motors and fans.Checking all the electrical panels and PCB Boards.	8	Each	₹ 14,300.00	₹ 1,14,400.00	once in a quarter

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ANNUAL RATE CONTRACT (ARC) ON MECHANICAL MAINTENANCE JOBS: PROPOSED ITEMS FOR 1 YEAR

Sr.No	Work	Work Description and Job Scope	Proposed quantities for 1 year	UOM	Unit rate	Total Cost	Remarks
		SUB- TOTAL ON ESTIMATED JOBS RELATED TO SERVICING OF DIFFERENT CAPACITY AC'S				₹ 5,84,012.00	

7) Annual Rate Contract on Miscellaneous Mechanical Maintenance Jobs at ISPRL, Visakhapatnam

Sr.No	Work	Work Description		UOM	Unit rate (INR)	Total Cost	Remarks
7.1	Cleaning of Strainer	The job includes draining the strainers on the suction line of the pumps, replacing the gaskets if necessary and cleaning them once every three months and stencilling the date of cleaning on the strainers. The drained product has to be collected in barrels and disposed as advised by the Job engineer. The gaskets, nuts, bolts etc. will be supplied by ISPRL.	150	Inch Dia	₹ 78.32	₹ 11,748.00	Job on need base
7.2	Dismantling of Pipe line / Structure	Dismantling of damaged & unused pipelines/ structures and transporting to scrap yard using cutting/cold cutting etc.	5	Metric ton	₹ 2,892.50	₹ 14,462.50	Job on need base
7.3	Emergency Shower maintenance	The job includes replacement of valves, maintenance of chains, valve handles on the emergency showers and tightening, fixing of portable water line on the shower in case of leak using Teflon tape. The valve, chain etc. will be provided by ISPRL. Agency should ensure good working condition without leaks.	8	Each	₹ 445.00	₹ 3,560.00	Job on need base
7.4	Gasket replacement up to 12"	The job includes dismantling of the flange coupling, cutting and replacing the gasket of adequate size and fixing back the complete in all respects and disposing the collected product as advised by the officer-in-charge. Gaskets will be supplied by ISPRL. Required Special tools like wedge spreads is under agency scope.	20	Each	₹ 373.80	₹ 7,476.00	Job on need base
7.5	Gasket replacement 12" to 16"	The job includes dismantling of the flange coupling, cutting and replacing the gasket of adequate size and fixing back the complete in all respects and disposing the collected product as advised by the officer-in-charge. Gaskets will be supplied by ISPRL. Required Special tools like wedge spreads is under agency scope.	20	Each	₹ 480.60	₹ 9,612.00	Job on need base
7.6	Gasket replacement 18" to 24"	The job includes dismantling of the flange coupling, cutting and replacing the gasket of adequate size and fixing back the complete in all respects and disposing the collected product as advised by the officer-in-charge. Gaskets will be supplied by ISPRL. Required Special tools like wedge spreads is under agency scope.	10	Each	₹ 685.30	₹ 6,853.00	Job on need base
7.7	Flange joints SORF to blind F up to 12"	Providing SORF to Blind Flange joints of up to 12" from ISPRL supplied flanges including fixing and welding. Rate shall also include fixing 2 mm thick CAF oil permeate gasket , fixing all stud & nuts of approved make, size & dia. with washers etc., complete. The job also includes supply & fixing 10 SWG copper wires on stud & bolts (2 nos. wire on each flange joint) on either side for electrical continuity. The studs, nuts and gaskets will be provided by ISPRL. Two flanges shall constitute one flange joint.	3	Each	₹ 1,806.70	₹ 5,420.10	Job on need base
7.8	Flange joints SORF to blind F 14" to 26"	Providing SORF to Blind Flange joints of 14" to 26" from ISPRL supplied flanges including fixing and welding. Rate shall also include fixing 2 mm thick CAF oil permeate gasket , fixing all stud & nuts of approved make, size & dia. with washers etc., complete. The job also includes supply & fixing 10 SWG copper wires on stud & bolts (2 nos. wire on each flange joint) on either side for electrical continuity. The studs, nuts and gaskets will be provided by ISPRL. Two flanges shall constitute one flange joint.	8	Each	₹ 3,609.84	₹ 28,878.72	Job on need base

M/s Indian Strategic Petroleum Reserves Limited, Visakhapatnam

ANNUAL RATE CONTRACT (ARC) ON MECHANICAL MAINTENANCE JOBS: PROPOSED ITEMS FOR 1 YEAR

Sr.No	Work	Work Description and Job Scope	Proposed quantities for 1 year	UOM	Unit rate	Total Cost	Remarks
7.9	Flange joints SORF to blind F 28" to 42"	Providing SORF to Blind Flange joints of 28" to 42" from ISPRL supplied flanges including fixing and welding. Rate shall also include fixing 2 mm thick CAF oil permeate gasket , fixing all stud & nuts of approved make, size & dia. with washers etc., complete. The job also includes supply & fixing 10 SWG copper wires on stud & bolts (2 nos. wire on each flange joint) on either side for electrical continuity. The studs, nuts and gaskets will be provided by ISPRL. Two flanges shall constitute one flange joint.	4	Each	₹ 5,420.10	₹ 21,680.40	Job on need base
7.10	Flange joints SORF to SORF FL up to 12"	Providing SORF to Blind Flange joints of up to 12" from ISPRL supplied flanges including fixing and welding. Rate shall also include fixing 2 mm thick CAF oil permeate gasket , fixing all stud & nuts of approved make, size & dia. with washers etc., complete. The job also includes supply & fixing 10 SWG copper wires on stud & bolts (2 nos. wire on each flange joint) on either side for electrical continuity. The studs, nuts and gaskets will be provided by ISPRL. Two flanges shall constitute one flange joint.	4	Each	₹ 3,609.84	₹ 14,439.36	Job on need base
7.11	Flange joints SORF to SORF FL 14" to 26"	Providing SORF to Blind Flange joints of 14" to 26" from ISPRL supplied flanges including fixing and welding. Rate shall also include fixing 2 mm thick CAF oil permeate gasket , fixing all stud & nuts of approved make, size & dia. with washers etc., complete. The job also includes supply & fixing 10 SWG copper wires on stud & bolts (2 nos. wire on each flange joint) on either side for electrical continuity. The studs, nuts and gaskets will be provided by ISPRL. Two flanges shall constitute one flange joint.	5	Each	₹ 1,806.70	₹ 9,033.50	Job on need base
7.12	Flange joints SORF to SORF FL 28" to 42"	Providing SORF to Blind Flange joints of 28" to 42" from ISPRL supplied flanges including fixing and welding. Rate shall also include fixing 2 mm thick CAF oil permeate gasket , fixing all stud & nuts of approved make, size & dia. with washers etc., complete. The job also includes supply & fixing 10 SWG copper wires on stud & bolts (2 nos. wire on each flange joint) on either side for electrical continuity. The studs, nuts and gaskets will be provided by ISPRL. Two flanges shall constitute one flange joint.	3	Each	₹ 5,420.10	₹ 16,260.30	Job on need base
7.13	Renting Hydra	Supply of & operation of Hydra of 8/12 ton capacity on rent basis, as and when advised by ISPRL.	100	Hour	₹ 1,342.12	₹ 1,34,212.00	Job on need base
7.14	Renting JCB	Supply and & operation of JCB for miscellaneous jobs on rent basis, as & when advised by ISPRL. Payment to be made on per hour basis.	50	Hour	₹ 1,051.98	₹ 52,599.00	Job on need base
7.15	Renting Tractor	Supply & operation of tractor for shifting of materials on rent basis, as and when advised by ISPRL.	50	Hour	₹ 1,476.51	₹ 73,825.50	Job on need base
7.16	Renting 25KVA DG set	Good working condition machine along with cables to be supplied. Operator & Fuel in the scope of agency.	120	Hour	₹ 712.00	₹ 85,440.00	Job on need base
7.17	Blinding and De-blinding	Removal of existing blinds in between flanges by evacuating the product in the line using barrels. Placing of blinds in between flanges by evacuating the product in the line using barrels. The gaskets, nuts, bolts etc. will be supplied by ISPRL.	800	inch dia	₹ 379.14	₹ 3,03,312.00	Job on need base
7.18	Hydro test of loops up to 1000 mtr	Hydro testing of pipeline using water supplied by ISPRL to required pressure up to stipulated time. Necessary arrangement for water pumping like nipples, hoses, NRV to be supplied by ISPRL. Required hydrotest pump arrangement in the scope of agency.	50000	inch meter	₹ 3.60	₹ 1,79,780.00	Job on need base

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ANNUAL RATE CONTRACT (ARC) ON MECHANICAL MAINTENANCE JOBS: PROPOSED ITEMS FOR 1 YEAR

Sr.No	Work	Work Description and Job Scope	Proposed quantities for 1 year	UOM	Unit rate	Total Cost	Remarks
7.19	Arresting of flange leaks	Split the flanges either manually or by using flange splitters (as per requirement). Clean the flange faces and check for damage. Inspect all bolts for damage. Remove burrs from all threads. Lubricate threads of the bolt and surface of the nut face. Install and centre the new gasket.	250	Inch dia	₹ 21.36	₹ 5,340.00	Job on need base
7.20	threaded fittings each joint	The job includes fabrication and installation of pipelines including fittings for portable water, venting lines etc. at a designated area using threaded joints. The joints must be completed by use of Teflon tape on the threads. The pipes, 90 bends, angles etc. will be provided by ISPRL.	200	inch dia	₹ 45.39	₹ 9,078.00	Job on need base
7.21	un plugging Lines	Unplugging lines and drain the product to ows line and if required water flushing to be carried out by advice of job engineer.	50	per shift	₹ 2,644.19	₹ 1,32,209.50	Job on need base
7.22	Supply of sand bags	Sand bag with minimum weight should be 25 kgs, grade -2 zone sand to be maintain, supply and transportation under agency scope only. Material stored as per job engineer advice.	100	each	₹ 712.00	₹ 71,200.00	Job on need base
7.23	Supply of cement bags	cement bag with minimum weight should be 25 kgs, grade -53 to be maintain, supply and transportation under agency scope only. Material stored as per job engineer advice.	100	each	₹ 400.50	₹ 40,050.00	Job on need base
7.24	Civil work excavation	manual excavation or machinery excavation to be done as ISPRL job engineer advice only, above 1 meter depth excavation jobs proper work permit system should follow.	50	cu. meter	₹ 222.50	₹ 11,125.00	Job on need base
7.25	filling with available excavate	manual or machinery back filling to be done as ISPRL job engineer advice.	50	cu. meter	₹ 97.90	₹ 4,895.00	Job on need base
7.26	Demolition of PCC work	Jobs to be carried out with machinery , removal of debris shifted to designated location as per job engineer advice.	10	cu. meter	₹ 991.46	₹ 9,914.60	Job on need base
7.27	Demolition of RCC work	Jobs to be carried out with machinery , removal of debris shifted to designated location as per job engineer advice.	5	cu. meter	₹ 1,982.03	₹ 9,910.15	Job on need base
7.28	Laying PCC 1:1.5:3	Approved Cement to be used for PCC, PCC should be maintain M20 grade (men, material & tools in the scope of agency)	50	cu. meter	₹ 6,193.51	₹ 3,09,675.50	Job on need base
7.29	Laying RCC	Approved Cement to be use for RCC, RCC should be maintain M30 grade, Rod size to be maintain 8mm to 12mm as per job engineer advice. (men, material & tools in the scope of agency)	30	cu. meter	₹ 6,372.40	₹ 1,91,172.00	Job on need base
7.30	Dye penetration test	As per welding specification DP test to be carried and third party certificate to be submitted. (men, material & tools in the scope of agency)	200	inch dia	₹ 66.75	₹ 13,350.00	Job on need base
7.31	supply of 10 hp de watering pump	only pumping hours will be counted for payment.	25	hour	₹ 155.75	₹ 3,893.75	Job on need base
7.32	supply of 5 hp dewatering pump	only pumping hours will be counted for payment.	50	hour	₹ 142.40	₹ 7,120.00	Job on need base
7.33	supply of reinforcement steel	Visakha steel/ Jindal / Tata brands only to be supplied as per requirement. Transport and drooping in the plant at required place is under agency scope.	500	kg	₹ 97.90	₹ 48,950.00	Job on need base
7.34	supply of diesel welding machine	Good working condition machine to be supplied along with operator, and if any machine repair occurs while in emergency work, down time hours double the payment will be deducted. Fuel supply in agency scope.	20	hour	₹ 256.32	₹ 5,126.40	Job on need base
7.35	Supply and application of metal primer	Agency to provide necessary skilled Manpower, Materials (Consumables as well as non-Consumables), Necessary scaffolding as required and any other material not explicitly mentioned but required to complete the assigned job in entirety.	100	SQ METERS	₹ 115.70	₹ 11,570.00	Job on need base
7.36	Supply and application of plastic emulation paint	Agency to provide necessary skilled Manpower, Materials (Consumables as well as non-Consumables), Necessary scaffolding as required and any other material not explicitly mentioned but required to complete the assigned job in entirety.	100	SQ METERS	₹ 115.70	₹ 11,570.00	Job on need base

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ANNUAL RATE CONTRACT (ARC) ON MECHANICAL MAINTENANCE JOBS: PROPOSED ITEMS FOR 1 YEAR

Sr.No	Work	Work Description and Job Scope	Proposed quantities for 1 year	UOM	Unit rate	Total Cost	Remarks
7.37	Laying pipe line 1"- 6"	The job includes laying of pipes along with suitable/ required fittings. Use of lifting tools like chain pulley blocks and hydra are in contractor scope.	200	running meter	₹ 356.00	₹ 71,200.00	Job on need base
7.38	Laying pipe line 8"- 12"	The job includes laying of pipes along with suitable/ required fittings. Use of lifting tools like chain pulley blocks and hydra are in contractor scope.	85	running meter	₹ 809.90	₹ 68,841.50	Job on need base
7.39	Laying pipe line 14"- 32"	The job includes laying of pipes along with suitable/ required fittings. Use of lifting tools like chain pulley blocks and hydra are in contractor scope.	200	running meter	₹ 1,677.65	₹ 3,35,530.00	Job on need base
7.40	Laying of threaded pipeline with thread making	The job includes preparation of pipes with suitable die cutter for threads & laying of pipelines including fittings for portable water/ venting lines etc. at a designated area using threaded joints. The joints must be completed by use of Teflon tape on the threads. The pipes, 90 bends, angles etc. will be provided by ISPRL.	100	inch meter	₹ 129.05	₹ 12,905.00	Job on need base
7.41	Laying of threaded pipeline with out thread making	The job includes laying of pipelines including fittings for portable water/ venting lines etc. at a designated area using threaded joints. The joints must be completed by use of Teflon tape on the threads. The pipes, 90 bends, angles etc. will be provided by ISPRL.	100	running meter	₹ 173.55	₹ 17,355.00	Job on need base
7.42	Lube oil filters replacement of pumps, engines, compressor	1. After isolation electrical/ process, remove the filters. 2. Clean the cover with diesel. 3. Install new filter. 4. Carry out leak test. 5. Check the performance after start up.	10	nos	₹ 1,157.00	₹ 11,570.00	Job on need base
7.43	Air filters cleaning/replacement of compressor, engines	1. After isolation electrical/ process, remove the filters. 2. Clean the cover with air. 3. Install new filter. 4. Carry out leak test. 5. Check the performance after start up.	10	nos	₹ 934.50	₹ 9,345.00	Job on need base
7.44	Scaffolding erection and removal along with supply of scaffolding material up to height of 6meters	1. Erect system (CUPLOK) scaffolding at all elevations and locations as instructed by Job Engineer. 2. Scaffolding shall be erected as per procedure mentioned in Maintenance Work Procedure - MNT/ONS/MWP/14 .Specification of scaffolding material is mentioned in the MWP. 3. Proper landing platform shall be made using grilled gratings at each level (interval of max.6 meters) upto top/working platform of scaffolding. 4. Safe ladder steps shall be provided at each landing platform for easy level to level climbing. Step ladders shall be made up either of steel complying with IS 1977:1975 or of Aluminium Alloys complying with IS 617:1975. Ladder rung spacing shall be uniform and distance between any two rungs shall not exceed 1 ft. 5. Upper end of ladder rails shall be welded with hooks for proper securing over scaffolding pipe and ladder to be fastened at its middle and bottom to scaffolding pipes using suitable fittings like swivel clamps to have adequate rigidity and to prevent slipping/tilting.6. For working at any level, working platform with guard railing, toe plate and grilled grating base shall be made and workmen shall use this working platform for erection of scaffolding to the next level. Standing on scaffolding pipe(s) for erection/dismantling jobs is not permissible.7. Each working / landing platform shall provided with hand / guard railing right round the platform to avoid falling of objects. The minimum distance between top rail and platform shall be 0.9m to 1.05m. 8. Agency shall use suitable base plates (fixed / adjustable) for leveling the scaffolding to horizontal. 9. Ensure enough rigidity of scaffolding at different heights by providing adequate diagonal bracing tubes. 10. Scaffolding verticals shall be of maximum 3 meter height with the cups welded at 0.5m span and ledgers (horizontal) shall be of maximum 2.5 meter long with ends welded with forged blades. 11. Per block of size 2.5m (Width) x 2.5m (Breadth) x 3m (Height) erected and dismantled for the heights up to 6mtr. from the ground level.	1500	Blocks	₹ 1,268.46	₹ 19,02,696.20	Job on need base

M/s Indian Strategic Petroleum Reserves Limited, Visakhapatnam

ANNUAL RATE CONTRACT (ARC) ON MECHANICAL MAINTENANCE JOBS: PROPOSED ITEMS FOR 1 YEAR

Sr.No	Work	Work Description and Job Scope	Proposed quantities for 1 year	UOM	Unit rate	Total Cost	Remarks
7.45	Scaffolding erection and removal along with supply of scaffolding material up to height above 6 meters to 12 meters	<p>1. Erect system (COF LOCK) scaffolding at all elevations and locations as instructed by Job Engineer. 2. Scaffolding shall be erected as per procedure mentioned in Maintenance Work Procedure - MNT/ONS/MWP/14. Specification of scaffolding material is mentioned in the MWP. 3. Proper landing platform shall be made using grilled gratings at each level (interval of max.6 meters) upto top/working platform of scaffolding. 4. Safe ladder steps shall be provided at each landing platform for easy level to level climbing. Step ladders shall be made up either of steel complying with IS 1977:1975 or of Aluminium Alloys complying with IS 617:1975. Ladder rung spacing shall be uniform and distance between any two rungs shall not exceed 1 ft. 5. Upper end of ladder rails shall be welded with hooks for proper securing over scaffolding pipe and ladder to be fastened at its middle and bottom to scaffolding pipes using suitable fittings like swivel clamps to have adequate rigidity and to prevent slipping/tilting. 6. For working at any level, working platform with guard railing, toe plate and grilled grating base shall be made and workmen shall use this working platform for erection of scaffolding to the next level. Standing on scaffolding pipe(s) for erection/dismantling jobs is not permissible. 7. Each working / landing platform shall provided with hand / guard railing right round the platform to avoid falling of objects. The minimum distance between top rail and platform shall be 0.9m to 1.05m. 8. Agency shall use suitable base plates (fixed / adjustable) for leveling the scaffolding to horizontal. 9. Ensure enough rigidity of scaffolding at different heights by providing adequate diagonal bracing tubes. 10. Scaffolding verticals shall be of maximum 3 meter height with the cups welded at 0.5m span and ledgers (horizontal) shall be of maximum 2.5 meter long with ends welded with forged blades. 11. Per block of size 2.5m (Width) x 2.5m (Breadth) x 3m (Height) erected and dismantled for the heights above 6mtr up to 12mtr. from the ground level.</p>	700	Blocks	₹ 1,602.12	₹ 11,21,483.73	Job on need base

M/s Indian Strategic Petroleum Reserves Limited, Visakhapatnam

ANNUAL RATE CONTRACT (ARC) ON MECHANICAL MAINTENANCE JOBS: PROPOSED ITEMS FOR 1 YEAR

Sr.No	Work	Work Description and Job Scope	Proposed quantities for 1 year	UOM	Unit rate	Total Cost	Remarks
7.46	Scaffolding erection and removal along with supply of scaffolding material up to height above 12 meters	1. Erect system (COFLOR) scaffolding at all elevations and locations as instructed by Job Engineer. 2. Scaffolding shall be erected as per procedure mentioned in Maintenance Work Procedure - MNT/ONS/MWP/14. Specification of scaffolding material is mentioned in the MWP. 3. Proper landing platform shall be made using grilled gratings at each level (interval of max.6 meters) upto top/working platform of scaffolding. 4. Safe ladder steps shall be provided at each landing platform for easy level to level climbing. Step ladders shall be made up either of steel complying with IS 1977:1975 or of Aluminium Alloys complying with IS 617:1975. Ladder rung spacing shall be uniform and distance between any two rungs shall not exceed 1 ft. 5. Upper end of ladder rails shall be welded with hooks for proper securing over scaffolding pipe and ladder to be fastened at its middle and bottom to scaffolding pipes using suitable fittings like swivel clamps to have adequate rigidity and to prevent slipping/tilting. 6. For working at any level, working platform with guard railing, toe plate and grilled grating base shall be made and workmen shall use this working platform for erection of scaffolding to the next level. Standing on scaffolding pipe(s) for erection/dismantling jobs is not permissible. 7. Each working / landing platform shall provided with hand / guard railing right round the platform to avoid falling of objects. The minimum distance between top rail and platform shall be 0.9m to 1.05m. 8. Agency shall use suitable base plates (fixed / adjustable) for leveling the scaffolding to horizontal. 9. Ensure enough rigidity of scaffolding at different heights by providing adequate diagonal bracing tubes. 10. Scaffolding verticals shall be of maximum 3 meter height with the cups welded at 0.5m span and ledgers (horizontals) shall be of maximum 2.5 meter long with ends welded with forged blades. 11. Per block of size 2.5m (Width) x 2.5m (Breadth) x 3m (Height) erected and dismantled for the heights above 12mtr. from the ground level.	700	Blocks	₹ 1,920.29	₹ 13,44,204.11	Job on need base
7.47	Aluminium window hinges	Supply and fixing of friction stay ss hinges including both upper and lower hinges.	150	each	₹ 400.50	₹ 60,075.00	Job on need base
7.48	Aluminium window handles	Supply and fixing of Aluminium sweep (AECWH) both left and right.	150	each	₹ 106.80	₹ 16,020.00	Job on need base
7.49	Aluminium auto door closer	Supply and fixing of over head aluminium auto door closer with idle door weight 90kgs.	50	each	₹ 1,780.00	₹ 89,000.00	Job on need base
7.50	Aluminium auto door stopper	Supply and fixing of door mounting hanging steel finish of 5 inches	100	each	₹ 320.40	₹ 32,040.00	Job on need base
7.51	Aluminium door floor mounted springs	Supply and fixing of aluminium heavy duty floor mounted springs for industries (Swing both sides)	20	each	₹ 3,115.00	₹ 62,300.00	Job on need base
7.52	Aluminium door seal with rubber bush	Supply and fixing of aluminium brush window seal strip	200	RM	₹ 44.50	₹ 8,900.00	Job on need base
		SUB- TOTAL ON ESTIMATED JOBS MISC. MAINTENANCE JOBS				₹ 70,38,207.83	

8) Supply of Skilled/Unskilled Manpower such as General Fitters, Pipe Fitters, General Welders, IBR Welders, Riggers & Helpers

Sr.No	Work	Work Description	UOM	Unit rate (INR)	Total Cost
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M/s Indian Strategic Petroleum Reserves Limited, Visakhapatnam

ANNUAL RATE CONTRACT (ARC) ON MECHANICAL MAINTENANCE JOBS: PROPOSED ITEMS FOR 1 YEAR

Sr.No	Work	Work Description and Job Scope	Proposed quantities for 1 year	UOM	Unit rate	Total Cost	Remarks
8.1	Providing Inspection services	Person with Degree in Mech/Metallurgical/Chemical Engineering with age less than 48 years with working experience in Petroleum Refinery/Fertilizer/Petrochemical/chemical/pressure vessel fabrication Industry having knowledge in maintenance jobs and inspection on the repair jobs, interpretation of NDT, DPT,UT, UFDT, Radiography, Leak Test. Ability to review equipment drawing, process flow diagrams, P&I drawings, experience in carrying external, internal visual inspection etc	150	man day	₹ 3,675.00	₹ 5,51,250.00	Job on need base
8.2	Emergency maintenace jobs	Providing the 2 skilled persons and 1 Helper at ISPRL site for Emergency maintenace jobs	300	per day	₹ 3,675.00	₹ 11,02,500.00	normal working days
8.3	Supply of Helper	The job will include other miscellaneous mechanical works other than the jobs described in various lines of this PO. The rate will be in terms of manpower provided.	300	man day	₹ 1,151.85	₹ 3,45,555.00	Job on need base
8.4	Supply of Swagelok fabricator	Swagelok certified fabricator for a Normal duty of 8 Hrs.	52	man day	₹ 3,234.00	₹ 1,68,168.00	Job on need base
8.5	Supply of Skilled manpower	providing the skilled plumber with require tools to carry out the Misslenious plumbing works, mason works,Aluminium skilled workers, repair works.	200	man day	₹ 1,996.05	₹ 3,99,210.00	Job on need base
8.6	Batch for attending emergency and misc. jobs at Sundays and holidays	Batch consisting of 1 FM + 1 Helper for attending emergency and misc. jobs for 8 hour shift on Sundays and Holidays	5	Each	₹ 4,172.70	₹ 20,863.50	Job on need base
8.7	over time charges for FMH for	Worker working behind 8 hours, than over time charges applicable	51	hour	₹ 394.80	₹ 20,126.90	Job on need base
8.8	Over time charges for helper	Worker working behind 8 hours, than over time charges applicable	51	hour	₹ 285.60	₹ 14,447.65	Job on need base
SUB- TOTAL ON ESTIMATED JOBS MISC. MAINTENANCE JOBS						₹ 26,22,121.05	
9) Fire and safety							
9.1	Servicing of DCP extinguishers (9&10kg)	Servicing,Refilling,Hydrotest and painting and stenciling. (transportation, spares shall be provided by isprl if required)	80	Each	₹ 2,225.00	₹ 1,78,000.00	Job on need base
9.2	Servicing of Co2 extinguishers (4.5kg)	Servicing,Refilling,Hydrotest and painting and stenciling. (transportation, spares shall be provided by isprl if required)	108	Each	₹ 2,047.00	₹ 2,21,076.00	Job on need base
9.3	Servicing of BA Sets	Servicing,Refilling,Hydrotest and painting and stenciling. (transportation, spares shall be provided by isprl if required)	3	Each	₹ 4,895.00	₹ 14,685.00	Job on need base
9.4	Calibration and testing Explosive meter	Carrying calibration and testing and certification of Explosive meter through authorised agency as advised by ISPRL	2	Each	₹ 5,785.00	₹ 11,570.00	Job on need base
9.5	Calibration and testing Gas Detectors	Carrying calibration and testing and certification of Gas Detectors through authorised agency as advised by ISPRL	25	Each	₹ 445.00	₹ 11,125.00	Job on need base
SUB- TOTAL ON ESTIMATED JOBS FIRE AND SAFETY						₹ 4,36,456.00	

TOTAL FOR 1 YEAR

₹ 163,66,687.40