

SCHEDULE OF RATES

PART B

Section-1 : DOWNSTREAM UNITS (LLDPE/PPU/PTD)

Section-2 : CPP, OFFSITES , IOPs INCLUDING PIPELINES, RAILWAY SIDING, INTAKE
WELL AND CENTRAL WORKSHOP OF M/S BCPL

ANNUAL MAINTENANCE CONTRACT FOR MECHANICAL WORKS OF BCPLPART-B- DOWNSTREAM UNITS (LLDPE/PPU/ PTD), CPP, OFFSITES & IOP UNITS INCLUDING PIPELINES, WORKSHOP, RWIW and RAILWAY SIDINGSUMMARY OF TOTAL COSTS

SUMMARY OF TOTAL COSTS				
SI No	SECTIONS	Sub-section	DESCRIPTION	TOTAL AMOUNT (INR)
1	<u>PART-B-SECTION-1</u> (Down Steam Units- LLDPE, PPU & PTD)	PART-B-SECTION-1 (i)	SOR based Piping related maintenance activities in downstream units (LLDPE, PPU & PTD)	
2		PART-B-SECTION-1 (ii)	SOR based Equipment related maintenance activities in downstream units (LLDPE, PPU & PTD)	
3		PART-B-SECTION-1 (iii)	Mandays cost for Critical equipments maintenance activities, emergency shutdown activities etc in downstream units (LLDPE, PPU & PTD)	
4	<u>PART-B-SECTION-2</u> (CPP, OFFSITES & IOP UNITS INCLUDING PIPELINES, WORKSHOP, RWIW and RAILWAY SIDING)	PART-B-SECTION-2 (i)	SOR based Piping related maintenance activities in CPP, OFFSITES & IOP UNITS INCLUDING PIPELINES, WORKSHOP, RWIW and RAILWAY SIDING	
5		PART-B-SECTION-2 (ii)	SOR based Equipment related maintenance activities in CPP, OFFSITES & IOP UNITS INCLUDING PIPELINES, WORKSHOP, RWIW and RAILWAY SIDING	
6		PART-B-SECTION-2 (iii)	Mandays (MAD) cost for Critical equipments maintenance activities, emergency shutdown activities etc. in CPP, OFFSITES & IOP UNITS INCLUDING PIPELINES, WORKSHOP, RWIW and RAILWAY SIDING	
PART-B- GRAND TOTAL AMOUNT EXCLUDING SERVICE TAX (INR)				



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PART-B (SECTION- 1) : DOWNSTREAM UNITS- LLDPE/PPU/PTD

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SUB- SECTION-1 (i) PIPING RELATED MAINTENANCE ACTIVITIES

SL NO	ITEM DESCRIPTION	UOM	QNTY	RATE (INR)	AMOUNT (INR)
1.0	FLANGE OPENING & BOX UP				
1.1	Flange opening of 150 rating Flanges Flanges of #150 rating :Opening or Boxing up of flanges with new gasket; gasket replacement after cleaning of gasket faces < cutting of gasket from sheets wherever required >; inserting or removal of spectacle blind/ tail blind wherever necessary to isolate piping; equipments such as column; furnace etc. ; including supply of tools; tackles and manpower necessary to complete the job up to the satisfaction of Engineer In-Charge. If hot bolting is required it is to be done without any extra cost. The flange sizes of-				
1.1.1	Flange Opening 0.5-1.5" sizes x 150 #	NOS. (PAIRS)	800		
1.1.2	Flange opening 2'-3"x150#	NOS. (PAIRS)	500		
1.1.3	Flange opening 4-8"x150#	NOS. (PAIRS)	500		
1.1.4	Flange opening 10-14"x150#	NOS. (PAIRS)	500		
1.1.5	Flange opening 16-18"x150	NOS. (PAIRS)	100		
1.1.6	Flange opening 20"x150# and above	NOS. (PAIRS)	100		



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SUB- SECTION-1 (i) PIPING RELATED MAINTENANCE ACTIVITIES

SL NO	ITEM DESCRIPTION	UOM	QNTY	RATE (INR)	AMOUNT (INR)
1.2	Flange opening of 300-600 rating Flanges				
	Flanges of 300# -600# :Opening or Boxing up of flanges with new gasket; gasket replacement after cleaning of gasket faces < cutting of gasket from sheets wherever required >; inserting or removal of spectacle blind/ tail blind wherever necessary to isolate piping; equipments such as column; furnace etc. ; including supply of tools; tackles and manpower necessary to complete the job up to the satisfaction of Engineer In-Charge. If hot bolting is required it is to be done without any extra cost. The flange sizes of-				
1.2.1	Flange Opening 0.5-1.5" sizes x 300#-600 #	NOS. (PAIRS)	750		
1.2.2	Flange opening 2" -3" x300#-600 #	NOS. (PAIRS)	600		
1.2.3	Flange opening 4 -8" x300#-600 #	NOS. (PAIRS)	500		
1.2.4	Flange opening 10-14" x300#-600 #	NOS. (PAIRS)	200		
1.2.5	Flange opening 16-18" x300#-600 #	NOS. (PAIRS)	100		
1.2.6	Flange opening 20" x 300#-600# and above	NOS. (PAIRS)	75		



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SUB- SECTION-1 (i) PIPING RELATED MAINTENANCE ACTIVITIES

SL NO	ITEM DESCRIPTION	UOM	QNTY	RATE (INR)	AMOUNT (INR)
1.3	<u>Flange opening of 900-2500 rating</u>				
	Flanges of 900# to 2500#: Opening or Boxingup of flanges with new gasket; gasket replacement after cleaning of gasket faces < cutting of gasket from sheets wherever required > inserting or removal of spectacle blind /tail blind wherever necessary to isolate piping; equipments such as column; furnace etc. ; including supply of tools; tackles and manpower necessary to complete the job up to the satisfaction of Engineer In-Charge. If hot bolting is required it is to be done without any extra cost.				
1.3.1	Flange Opening 0.5-1.5" sizes x 900#-2500 #	NOS. (PAIRS)	150		
1.3.2	Flange opening 2"-3" x900#-2500 #	NOS. (PAIRS)	150		
1.3.3	Flange opening 4-8" x 900#-2500 #	NOS. (PAIRS)	100		
1.3.4	Flange opening 10-14" x 900#-2500 #	NOS. (PAIRS)	75		
1.3.5	Flange opening 16-18" x 900#-2500 #	NOS. (PAIRS)	50		
1.3.6	Flange opening 20" x900#-2500 # and above	NOS. (PAIRS)	25		
2.0	<u>HOT BOLTING OF FLANGES</u>				
2.1	<u>Hot bolting per inch dia for 150# of flange</u>				
	Hot bolting per inch-dia for 150# of flanges at all height as per instruction of E-I-C	ID	300		
2.2	<u>Hot bolting per inch-dia for 300-600# of flange</u>				
	Hot bolting per inch-dia for 300-600# of flanges at all height as per instruction of E-I-C	ID	300		
2.3	<u>Hot bolting per inch-dia for 900-2500# of flanges</u>				
	Hot bolting per inch-dia for 900-2500# of flanges at all height as per instruction of E-I-C	ID	250		



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SUB- SECTION-1 (i) PIPING RELATED MAINTENANCE ACTIVITIES

SL NO	ITEM DESCRIPTION	UOM	QNTY	RATE (INR)	AMOUNT (INR)
3.0	PIPELINE STRAINER CLEANING				
	Strainer cleaning for all types & all sizes				
3.1	Strainer cleaning for all types & all sizes (excluding channel/Basin strainer) take-out the strainer from body; clean the strainer/strainer sitting area with steam; water; air; cold repairing if necessary; box up after cleaning in all respect (flange opening & box-up as per flange rate) as per instruction of E-I-C				
3.1.1	Upto 4"	NOS	200		
3.1.2	4" to 12"	NOS	100		
3.1.3	above 12"	NOS	75		
	Channel strainer cleaning 2x1.5m"				
3.2	Channel Strainer Size 2m *1.5m Cleaningincluding lifting of strainer from position using chain pully or necessary lifting device; cleaning & refitting the strainer in proper position as per instruction of EIC	NOS	50		
	Basin strainer cleaning 3.5x1.5m"				
3.3	Basin Strainer Size 3.5m * 1.5mCleaningincluding lifting ofstrainer from position using chain pully or necessary lifting device ; cleaning and refitting the strainer in proper position as per instruction of E-I-C	NOS	35		
	Pre & Post filter cleaning dryer				
3.4	Pre & Post filter cleaning < Dryer Section > including dismantling of top cover flange ; filter candle ; cleaning & boxup as per instruction of E-I-C.	NOS	20		



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SUB- SECTION-1 (i) PIPING RELATED MAINTENANCE ACTIVITIES

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SL NO	ITEM DESCRIPTION	UOM	QNTY	RATE (INR)	AMOUNT (INR)
3.5	<u>Lube oil, gas filter cleaning upto 4"</u>				
	Lube oil/gas Filter cleaning/changing upto 4inch size flange or screw joint excluding flange/screwed joint rate including all arrangements of tool and tacksels as may be required;Cleaning of parts as required ;Offering BCPL for inspection if required ; shifting of all spares from workshop/store; Job isto be done as per instruction of BCPL representative ;all relevant data are to be recorded and handed over to concerned engineer in soft and hard copy	NOS	100		
3.6	<u>Lube oil, gas filter cleaning above 4"</u>				
	Lube oil/gas Filter cleaning/changing more than 4inch size flange or screw joint excluding flange/screwed joint rate including all arrangements of tool and tacksels as may be required;Cleaning of parts as required ;Offering BCPL for inspection if required ; shifting of all spares from workshop/store; Job is to be done as per instruction of BCPL representative ;all relevant data are to be recorded and handed over to concerned engineer in soft and hard copy	NOS	75		
4.0	<u>PSV MAINTENANCE</u>				
4.1	<u>Dismantling of PSV/TSV (Upto 3 M Height from Ground Level) :</u>				
	Dismantling of PSV/TSV (Upto 3 M Height from Ground Level) ;;at all elevation and at all locations;blinding the inlet and outlet connections;dropping it to ground level safely;transporting to workshop for necessary maintenance and repair by other agency;transporting from workshop to site after repair;deblinding the inlet/outlet connections;cleaning...				
4.1.1	Size 0.5" - 8"-Upto 3 M Height from Ground Level	Nos	150		
4.1.2	Size: 8" to 14" -Upto 3 M Height from Ground Level	Nos	100		
4.1.3	Sizes above 14" -Upto 3 M Height from Ground Level	Nos	75		



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SL NO	ITEM DESCRIPTION	UOM	QNTY	RATE (INR)	AMOUNT (INR)
	<u>Dismantling of PSV/TSV (3 M - 10 M Height from Ground Level) :</u>				
4.2	Dismantling of PSV/TSV (3 M - 10 M Height from Ground Level) ;:at all elevation and at all locations;blinding the inlet and outlet connections;dropping it to ground level safely;transporting to workshop for necessary maintenance and repair by other agency;transporting from workshop to site after repair;deblinding the inlet/outlet connections;cleaning...				
4.2.1	Size 0.5" - 8" (3 M - 10 M Height from Ground Level)	NOS	50		
4.2.2	8" - 14" (Upto 3 M - 10 M Height from Ground Level)	NOS	30		
4.2.3	Above 14" (Upto 3 M - 10 M Height from Ground Level)	NOS	20		
	<u>Dismantling of PSV/TSV (Above 10 M Height from Ground Level) :</u>				
4.3	Dismantling of PSV/TSV (Above 10 M Height from Ground Level) ;:at all elevation and at all locations;blinding the inlet and outlet connections;dropping it to ground level safely;transporting to workshop for necessary maintenance and repair by other agency;transporting from workshop to site after repair;deblinding the inlet/outlet connections;cleaning...				
4.3.1	Size 0.5" - 8" (Above 10 M Height from Ground Level)	NOS	20		
4.3.2	8" - 14" (Above 10 M Height from Ground Level)	NOS	20		
4.3.3	Above 14" (Above 10 M Height from Ground Level)	NOS	10		



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SUB- SECTION-1 (i) PIPING RELATED MAINTENANCE ACTIVITIES

SL NO	ITEM DESCRIPTION	UOM	QNTY	RATE (INR)	AMOUNT (INR)
5	ERECTION & DISMANTLING OF SCAFFOLDING				
5.1	Providing and fixing double scaffolding system (cup lock type), up to 06 meter height above ground level, including additional rows of scaffolding in stepped manner as per requirement of site, made with 40 mm dia M.S. Tube, placed 1.5 meter center to center, horizontal and vertical tube joints with cup and lock system with MS Tubes, MS Tube challis, MS Clamps and staircase system in the scaffolding for working platform etc and maintaining it in a serviceable condition for complete execution of work and removing it thereafter. The scaffolding system shall be stiffened with bracings, Runners, connecting with the building/structure etc wherever required, if feasible, for inspection of work at required locations with essential safety features for the workmen etc. complete as per directions and approval of Engineer-In-Charge. (Note- the volume of the scaffolding i.e. Height and plan area at the top shall be measured for payment purpose)	Cubic Meter	2000		
5.2	Same as item at SI No- 5.1, but for height up to 10 meter above ground level	Cubic Meter	2000		
5.3	Same as item at SI No- 5.1, but for height up to 20 meter above ground level	Cubic Meter	2000		
5.4	Same as item at SI No- 5.1, but for height up to 30 meter above ground level	Cubic Meter	2000		
5.5	Same as item at SI No- 5.1, but for height up to 50 meter above ground level	Cubic Meter	2000		



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SL NO	ITEM DESCRIPTION	UOM	QNTY	RATE (INR)	AMOUNT (INR)
5.6	Same as item at SI No- 5.1, but for height from 10 meter to 20 meter level	Cubic Meter	1000		
5.7	Same as item at SI No- 5.1, but for height from 20 meter to 30 meter level	Cubic Meter	1000		
6	OPENING & BOXING UP OF SCREWED FITTINGS				
	Opening and Boxing up of screwed fittings at all height and location with thread sealant; replacement of ferrul etc.; including tightening against leak if there when taken on line ; complete the job up to the satisfaction of Engineer In-Charge..(Excluding Instrumentation Fittings)				
6.1	Screwed fitting upto 3"	NOS	150		
6.2	Screwed fitting 3-6"	NOS	100		
6.3	Screwed fitting above 6"	NOS	50		
7	FABRICATION, WELDING & ERECTION				
7.1	CS pipe Fit-up				
	CS pipe Fit-up of different sizes in all site or in position on ground; overhead; at all elevations; including transportation of pipes; flanges; fittings etc. from owner's storage point to work site, deploying adequate resources & complete the job as per satisfaction of E.I.C.	ID	2000		
7.2	CS pipe Welding by SMAW				
	CS Pipe Welding by SMAW of different sizes in all site or in position on ground; overhead; at all elevations; including transportation of pipes; flanges; fittings etc. from owner's storage point to work site, deploying adequate resources & complete the job as per satisfaction of E.I.C.	ID	2000		
7.3	CS pipe Welding by TIG Welding				
	CS Pipe Welding by TIG Welding of different sizes in all site or in position on ground; overhead; at all elevations; including transportation of pipes; flanges; fittings etc. from owner's storage point to work site, deploying adequate resources & complete the job as per satisfaction of E.I.C.	ID	500		



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SUB- SECTION-1 (i) PIPING RELATED MAINTENANCE ACTIVITIES

SL NO	ITEM DESCRIPTION	UOM	QNTY	RATE (INR)	AMOUNT (INR)
	<u>SS pipe Fit-up</u>				
7.4	SS pipe Fit-up of different sizes in all site or in position on ground; overhead; at all elevations; including transportation of pipes; flanges; fittings etc. from owner's storage point to work site, deploying adequate resources & complete the job as per satisfaction of E.I.C.	ID	500		
	<u>SS pipe Welding by SMAW</u>				
7.5	SS Pipe Welding by SMAW of different sizes in all site or in position on ground; overhead; at all elevations; including transportation of pipes; flanges; fittings etc. from owner's storage point to work site, deploying adequate resources & complete the job as per satisfaction of E.I.C.	ID	500		
	<u>SS pipe Welding by TIG Welding</u>				
7.6	SS Pipe Welding by TIG Welding of different sizes in all site or in position on ground; overhead; at all elevations; including transportation of pipes; flanges; fittings etc. from owner's storage point to work site, deploying adequate resources & complete the job as per satisfaction of E.I.C.	ID	500		
	<u>Alloy steel / LTCS / Monel / Dissimilar material Piping Fit up</u>				
7.7	Alloy steel / LTCS / Monel / Dissimilar material Piping Fit up of different sizes in all site or in position on ground; overhead; at all elevations; including transportation of pipes; flanges; fittings etc. from owner's storage point to work site, deploying adequate resources & complete the job as per satisfaction of E.I.C.	ID	350		
	<u>Alloy steel / LTCS / Monel / Dissimilar material Piping TIG Welding</u>				
7.8	Alloy steel / LTCS / Monel / Dissimilar material Piping TIG Welding of different sizes in all site or in position on ground; overhead; at all elevations; including transportation of pipes; flanges; fittings etc. from owner's storage point to work site, deploying adequate resources & complete the job as per satisfaction of E.I.C.	ID	350		
7.9	Brazing of all kind of materials	ID	300		
7.10	Aloy Steel / LTCS / GR-3 / SS 304, 304L, 304H, 308, 308H, 316, 316L/Dissimilar Welding/Welding with any Special Electrode Piping	ID	200		
	<u>Erection of piping(any schedule)</u>				
7.11	Erection of piping(any schedule), job includes transportation of materials from store /fabrication yard, boxing up of flange joints of pipes, valves, etc .	IM	2500		



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SUB- SECTION-1 (i) PIPING RELATED MAINTENANCE ACTIVITIES

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SL NO	ITEM DESCRIPTION	UOM	QNTY	RATE (INR)	AMOUNT (INR)
8	OTHER PIPING RELATED MACHINING ACTIVITIES				
8.1	CS pipe Gas/Flame Cutting of different sizes CS pipe Gas/ Flame Cutting of different sizes in all site or in position on ground; overhead; at all elevations; including transportation of pipes; flanges; fittings etc. from owner's storage point to work site, deploying adequate resources & complete the job as per satisfaction of E.I.C.	ID	750		
8.2	CS pipe Beveling of different sizes CS pipe Beveling of different sizes in all site or in position on ground; overhead; at all elevations; including transportation of pipes; flanges; fittings etc. from owner's storage point to work site, deploying adequate resources & complete the job as per satisfaction of E.I.C.	ID	500		
8.3	SS pipe Gas/flame Cutting of different sizes SS pipe Gas/Flame Cutting of different sizes in all site or in position on ground; overhead; at all elevations; including transportation of pipes; flanges; fittings etc. from owner's storage point to work site, deploying adequate resources & complete the job as per satisfaction of E.I.C.	ID	500		
8.4	SS pipe Beveling of different sizes SS pipe Beveling of different sizes in all site or in position on ground; overhead; at all elevations; including transportation of pipes; flanges; fittings etc. from owner's storage point to work site, deploying adequate resources & complete the job as per satisfaction of E.I.C.	ID	500		
8.5	AS pipe Gas/Flame Cutting of different sizes AS pipe Gas/Flame Cutting of different sizes in all site or in position on ground; overhead; at all elevations; including transportation of pipes; flanges; fittings etc. from owner's storage point to work site, deploying adequate resources & complete the job as per satisfaction of E.I.C.	ID	300		
8.6	AS pipe Beveling of different sizes AS pipe Beveling of different sizes in all site or in position on ground; overhead; at all elevations; including transportation of pipes; flanges; fittings etc. from owner's storage point to work site, deploying adequate resources & complete the job as per satisfaction of E.I.C.	ID	300		



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SUB- SECTION-1 (i) PIPING RELATED MAINTENANCE ACTIVITIES

SL NO	ITEM DESCRIPTION	UOM	QNTY	RATE (INR)	AMOUNT (INR)
9	PIPING HYDROTESTING/PNEUMATIC TESTING				
9.1	CS/AS/SS Pipe Hydrotesting/ Pneumatic Testing of pipings : CS/AS/SS Pipe Hydrotesting/ Pneumatic Testing of pipings : Carrying out per inch dia per mtr. hydrotesting/ pneumatic testing as specified including all other miscellaneous works like blinding, de-blinding etc.; supply of tools, tackles, pressure gauge, hydro test pump and other resources necessary to complete the job upto the satisfaction of Engineer In-Charge. Hydraulic / Pneumatic testing of pipes: Work involves hydrostatic test ,pneumatic pressure testing as per site requirement. It includes all blinding & debinding jobs,gasket replacement,leakage arresting as per requirements.Hydro/pneumatic testing to be carried out on line as per instruction of Engineer-in-charge. Work involves hydrostatic test, pneumatic pressure testing as per requirement. It is being clarified here that for pipelines fabricated and erected by the contractor, hydraulic / pneumatic testing of the same will be in the scope of contractor and no separate payment will be made for that. However, if the contractor is asked to test any existing pipeline, he will be paid for the same as per SOR. The blinding / de-blinding work, gasket replacement, valves removal required for the test and normalization thereafter will be in the scope of this job and the contractor would not be paid separately for the same	IM	10000		
10	VALVES MAINTENANCE ACTIVITIES				
10.1	Dropping of valves (Any Type, Any rating , at any elevation & by any means): Securely supporting the valve with lifting device/jacking device; Dismantling of end connections of the valve by cutting/loosening of fasteners; Removal of valve from site to designated place/scrap.				
10.1.1	Valves sizes -2"-4"	NOS	150		
10.1.2	Valves sizes -6"-16"	NOS	100		
10.1.3	above 16"	NOS	50		
10.2	Erection of valves (Any Type, Any rating & at any Height) : Removal of dirt/grease/rust/foreign particles from seating surface & fasteners.; Alignment of end connection of valve with the existing pipeline; Boxing up of the flanged valves or erection of welded end valves up to edge preparation & fit up job excluding welding, welding shall be paid separately as per applicable SOR.	NOS			



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SUB- SECTION-1 (i) PIPING RELATED MAINTENANCE ACTIVITIES

SL NO	ITEM DESCRIPTION	UOM	QNTY	RATE (INR)	AMOUNT (INR)
10.2.1	Valves sizes -2"-4"	NOS	150		
10.2.2	Valves sizes -6"-16"	NOS	100		
10.2.3	above 16"	NOS	50		
10.3	Opening of bonnet of all type of Valves				
	Opening of bonnet of all type of gate; g lobe; ball; plug; check; needle; butterfly; control valves or any other similar valves of all sizes and all rating; at all elevations and at all locations; inside cleaning ; replacement of damaged gasket with new one or if required; cut from gasket sheet to proper size; if required, repairing of valve sheet etc. and box-up as per satisfaction of E.I.C.				
10.3.1	Valves sizes -2"-4"	NOS	150		
10.3.2	Valves sizes -6"-16"	NOS	100		
10.3.3	above 16"	NOS	50		
10.4	Maintenance including Dismantling/Assembling of Valves # 150 rating				
	Maintenance including Dismantling/assembling of all type of gate ; globe; ball; plug;check; needle; butterfly; control valves or any other similar valves of all size of 150#; at all elevations and at all locations; dropping it to ground level safely; transporting to & from workshop/store/open yard for necessary maintenance/repair/storage/erection; box-up with proper gasket; if required cutting from gasket sheet after cleaning studs; gasket faces etc. and complete the job as per satisfaction of E.I.C.				
10.4.1	Valves sizes -2"-4"	NOS	100		
10.4.2	Valves sizes -6"-16"	NOS	75		
10.4.3	above 16"	NOS	50		



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SL NO	ITEM DESCRIPTION	UOM	QNTY	RATE (INR)	AMOUNT (INR)
10.5	Maintenance including Dismantling/Assembling of Valves # 300 - #600 rating				
	Maintenance including Dismantling/assembling of all type of gate ; globe; ball; plug;check; needle; butterfly; control valves or any other similar valves of all size of 300-600# per inch-dia basis; at all elevations and at all locations; dropping it to ground level safely; transporting to & from workshop/store/open yard for necessary maintenance/repair/storage/erection; box-up with proper gasket; if required cutting from gasket sheet after cleaning studs; gasket faces etc. and complete the job as per satisfaction of E.I.C.				
	Valves sizes -2"-4"	NOS	100		
	Valves sizes -6"-16"	NOS	75		
	above 16"	NOS	50		
10.6	Maintenance including Dismantling/Assembling of Valves # 900- #2500 rating				
	Maintenance including Dismantling/assembling of all type of gate ; globe; ball; plug;check; needle; butterfly; control valves or any other similar valves of all size of 900-2500# per inch-dia basis; at all elevations and at all locations; dropping it to ground level safely; transporting to & from workshop/store/open yard for necessary Maintenance/repair/storage/erection; box-up with proper gasket; if required cutting from gasket sheet after cleaning studs; gasket faces etc. and complete the job as per satisfaction of E.I.C.				
	Valves sizes -2"-4"	NOS	75		
	Valves sizes -6"-16"	NOS	50		
	above 16"	NOS	25		



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PART-B (SECTION- 1) : DOWNSTREAM UNITS- LLDPE/PPU/PTD

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SUB- SECTION-1 (i) PIPING RELATED MAINTENANCE ACTIVITIES

SL NO	ITEM DESCRIPTION	UOM	QNTY	RATE (INR)	AMOUNT (INR)
10.7	Gland repacking of all type of Valves				
	Gland repacking of all type of gate; globe; ball; plug; check; needle; butterfly; control valves or any other similar valves of all size & all rating; at all elevations and at all locations; with proper size & specification of gland packing; extracting the damaged packings with proper tools; cutting the new packings into proper size; if required tighten after the valve taken in to service; as per instruction of E.I.C.				
10.7.1	Valves sizes -2"-4"	NOS	200		
10.7.2	Valves sizes -6"-16"	NOS	150		
10.7.3	above 16"	NOS	75		
10.8	Tightening of gland of type of Valves				
	Tightening of gland of type of gate; globe; ball; plug; check; needle; butterfly; control valves or any other similar valves of all size & all ratings; at all elevations and at all locations; to arrest leakage as per satisfaction of E-I-C.	NOS	200		
10.9	Greasing of all type of Valves				
	Greasing of valve stem / bush; Operating the valve for smoothening, if required of all type of gate; globe; ball; plug; check; needle; butterfly valves or any other similar valves of all size & all rating; at all elevations and at all locations by hand or grease gun as per requirement; after removing old grease and cleaning properly as per instruction of E-I-C.	NOS	300		
10.10	Gland Leakage Rectification of valve by tightening/replacement as per requirement				
	Removal of gland and old packing material; Cutting of new packing material to size; Assembly of gland with new packing material	NOS	200		
10.11	External Repairing/replacement of wheel/lock nut/ yoke nut/eye bolt etc. of all type of valves				
	Repairing/replacement of wheel/lock nut/ yoke nut/eye bolt etc. of all type of gate; globe; ball; plug; check; needle; butterfly; control valves or any other similar valves of all size & all rating; at all elevations as per instruction of EIC	NOS	150		



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PART-B (SECTION- 1) : DOWNSTREAM UNITS- ILLDPE/PPU/PTD

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SUB- SECTION-1 (i) PIPING RELATED MAINTENANCE ACTIVITIES

SL NO	ITEM DESCRIPTION	UOM	QNTY	RATE (INR)	AMOUNT (INR)
11	CLAMP RELATED ACTIVITIES				
	Clamp fabrication Size upto 6inch <dia.				
11.1	Clamp fabrication Size upto 6inch <dia. or cross sectional diagonal> from pipe; structural as per required shape & size; Transportation of all piping items from BCPL's storage point to work site/work shop; fabrication including cutting/ginding; edge preparation; inclusive of grinding the edges of pipe; fittings; flanges etc. to match with the mating edges of uneven; different thickness wherever required; fit-up; bending; welding; threading etc. at all elevation; fulfilling NDT performance; NDT under BCPL's scope; as required by Inspection deptt. of BCPL; with all arrangement for inspection; completing all such works in all respect; including preparation of drawings; as per specification; & instruction of E-I-C.	NOS	75		
	Clamp fabrication Size above 6inch <dia.				
11.2	Clamp fabrication Size above 6inch <dia. or cross sectional diagonal> from pipe; structural as per required shape & size; Transportation of all piping items from BCPL's storage point to work site/work shop; fabrication including cutting/ginding; edge preparation; inclusive of grinding the edges of pipe; fittings; flanges etc. to match with the mating edges of uneven; different thickness wherever required; fit-up; bending; welding; threading etc. at all elevation; fulfilling NDT performance; NDT under BCPL's scope; as required by Inspection deptt. of BCPL; with all arrangement for inspection; completing all such works in all respect; including preparation of drawings; as per specification; & instruction of E-I-C.	NOS	75		
	Opening or Boxing up size: up to 6inch of Clamps at all height and location including underground with sealant				
11.3	Opening or Boxing up size: up to 6inch of Clamps at all height and location including underground with sealant<magic wrap etc.> in online or offline piping; Cleaning the area where clamping to be done; cutting gasket from sheet; flexible hose wherever required; removing and inserting plugs wherever necessary to arrest leakage; removing water in underground leak by manual or pump; tightening against leak; complete the job up to the satisfaction of Engineer In-Charge.	NOS	75		
	Opening or Boxing up Size: above 6inch <dia. or cross sectional diagonal> of Clamps at all height and location including underground with sealant				
11.4	Opening or Boxing up Size: above 6inch <dia. or cross sectional diagonal> of Clamps at all height and location including underground with sealant<magic wrap etc.>; Cleaning the areawhere clamping to be done; cutting gasket from sheet; flexible hose wherever required; removing and inserting plugs wherever necessary to arrest leakage; removing water in underground leak by manual or pump; tightening against leak; complete the job up to the satisfaction of Engineer In-Charge.	NOS	75		



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SUB- SECTION-1 (i) PIPING RELATED MAINTENANCE ACTIVITIES

SL NO	ITEM DESCRIPTION	UOM	QNTY	RATE (INR)	AMOUNT (INR)
12	STRUCTURAL STEEL ACTIVITIES				
12.1	Fabrication & erection of steel structural Fabrication & erection of steel structural including transportation of material from owner's storage point to fabrication site/ work shop for pipe racks ; staircases; hand rails; gratings; ladders; platforms brackets etc. of all types; preparation of necessary drawings; including supply of all tools & tackles; equipments; machinery; consumables labour etc. necessary to complete the job in all respect as per drawing; codes& specification; including supply & application of one coat of red oxide primer; as per instruction of engineer incharge.< structural steel material; including nut bolt; washers; etc. will be supplied by BCPL	MT	10		
12.2	Dismantling of existing structural work Dismantling of existing structural work by cutting; grinding; gauging; including cleaning the area; grinding & making smooth the uneven cut surfaces and returning the cut out materials to BCPL store including supply of all tools & tackles; equipments; machinery; consumables labour etc. necessary to complete the job in all respect as per drawing; codes; specification & instructions of Engineer in-Charge;	MT	10		
12.3	Structural Fabrication and Erection (e.g. platform, stair case, hand railing, grating etc.) including primer coating. Issuance of all structural items from BCPL designated stores / other storage areas to the site as per instructions of ENGINEER-IN-CHARGE; Supply of all kind of machinery, tools, tackles and consumable items required to complete the fabrication job are in the scope of the contractor.; Gas Cutting, grinding etc.; Welding as per standard.; Erection at site including handling.; Primer Coat with Red Oxide Primer.; Erection and return of excess/unused material (as per standard Engineering practice) to BCPL designated stores / other storage areas as per instructions of ENGINEER-IN-CHARGE.	MT	10		
13	SWIVEL JOINTS DISMANTLING & REPAIRING				
13	Dismantling or erection of swivel joints by opening or box up of flanges; transportation of swivel joint to and from owner's storage point or maint. Yard completing the job in all respects with supply of all tools; tackles; trolley for transportation of swivel joints as per the instruction of E-I-C.				
13.1.1	Swivel joint dismantling 3-4"	NOS	20		
13.1.2	Swivel joint dismantling 6-8"	NOS	20		
13.2	Repairing of swivel joints by dismantling the bearing balls; lip seal; O' rings; providing tags for identification; cleaning of all parts; reassemble changing parts if reqd. to complete as per the instruction of E-I-C				
13.2.1	Swivel joint repairing 3-4"	NOS	20		



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SUB- SECTION-1 (i) PIPING RELATED MAINTENANCE ACTIVITIES

SL NO	ITEM DESCRIPTION	UOM	QNTY	RATE (INR)	AMOUNT (INR)
13.2.2	Swivel joint repairing 6-8"	NOS	20		
14	PLATE CUTTING & WELDING				
14.1	Plate cutting per mm thickness per running mtr.: To & fro Transportation of plates of all sizes from owners storage point to working site, Gas cutting of plates, finishing edge preparation by grinding, deploying adequate resources and complete the job as per satisfaction of E.I.C., UOM: MM thk per RM				
14.1.1	CS Plate cutting per mm thickness per running mtr	RM	200		
14.1.2	SS/AS Plate cutting per mm thickness per running mtr	RM	100		
14.2	Plate welding per mm thickness per running mtr.: To & fro Transportation of plates of all sizes from owners storage point to working site, Edge preparation by grinding, Fit-up & welding with proper electrode, ensuring interstage & final job quality through BCPL, deploying adequate resources and complete the job as per satisfaction of E.I.C., UOM: MM thk per RM				
14.2.1	CS Plate welding per mm thickness per running mtr	RM	200		
14.2.2	AS/SS Plate welding per mm thickness per running mtr.	RM	50		
14.3	Repair / Tack / Stitch / Plate welding/applicable for old/existing structures/pipings, etc	RM	20		



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SUB- SECTION-1 (i) PIPING RELATED MAINTENANCE ACTIVITIES

SL NO	ITEM DESCRIPTION	UOM	QNTY	RATE (INR)	AMOUNT (INR)
15	MISCELLANEOUS ACTIVITIES				
15.1	COPPER TUBING WORKS Copper Tubing work: Transportation of all Cu-tubing & fitting items from BCPL's storage point to work site; including cutting/bending to required length; fixing of valve; fittings etc.; connecting to nearest supply point of steam/air etc.; laying over piping as steam tracing providing as sample collector and complete the job as per satisfaction of E.I.C.	RM	300		
15.2	PIPELINE CLEANING Dechoking of pipe lines of all sizes and ratings at all height and locations including opening of required flanges; if necessary; dropping of pipe line; valve etc.; fixing of steam/air/water hose; dechoking and cleaning with steam/air/water; box up the lines <rate of opening & box up of flanges are as per flange rate> after dechoking as per instruction of E.I.C.				
15.2.1	Upto 6"	IM	2000		
15.2.2	6" -16"	IM	2000		
15.2.3	Above 16"	IM	2000		
15.3	All size expansion bellow opening; fabric part dismantling in RM; All size expansion bellow opening; fabric part dismantling in RM; replacement; refitting ; gasket cutting from sheet; stud; bolt cleaning, complete all job related to expansion joint to the satisfaction of E.I.C.	RM	10		
15.4					
15.4.1	Damper repairing upto 500mm Damper repairing/maintenance up to 500mm diagonal/diameter..	NOS	20		
15.4.2	Damper repairing above 500 mm Damper repairing more than 500 mm diagonal/diameter.	NOS	20		



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SUB- SECTION-1 (i) PIPING RELATED MAINTENANCE ACTIVITIES

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SL NO	ITEM DESCRIPTION	UOM	QNTY	RATE (INR)	AMOUNT (INR)
15.4.3	<u>Damper rope and pulley opening</u> Damper rope and pulley opening; repairing; fixing & re-positing/maintenance	NOS	20		
15.5	<u>Application of cold weld/magic wrap to a rrest leakage</u> Application of cold weld/magic wrap to a rrest leakage from any welding joint or parent metal at any height and loaction including underground piping; supply of magic wrap in NRL's scope; as per instruction of E-I-C	NOS	30		
15.6	<u>PIPE SUPPORT: Fabrication & erection of dummy pipe supports</u> PIPE SUPPORT: Fabrication & erection of dummy pipe supports like shoes; cradles; turn buckles; T-posts etc. of all types including supply & application one coat of red oxide; zinc chromate primer; all necessary equipment; consumables; labour returning surplus materials & scrap etc. to Owners storage points & completing work as per drawing; specifications & instructions of Engineer-in-charge. <The structural steel for pipe support will be supplied by the Owner from storage point free of cost : CS Material.	MT	2		
15.7	<u>Sparay nozzle cleaning</u> Spray Nozzle: opening; cleaning with steam/air/water to the satisfaction of E-I-C and box up with thread sealant after cleaning; if required replenishment; in any location and complete the job as per instruction of E-I-C	NOS	200		
15.8	<u>Steam trap repairing</u> Rectification of faulty steam trap of all sizes & ratings at all locations including opening & cleaning of steam traps along with their internals; lapping of disc seat; assemble; testing and box up as per instruction E-I-C	NOS	100		
15.9	<u>Transportation of materials</u> Transportation of different mechanical /electrical items /equipments e.g. electrical motors control valve rotameters; level trols industrial Valves; etc. using cart; trolley; trailer; crane etc. as per job requirement from one location to another as per instruction of the Engineers In-charge.	MT	100		



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PART-B (SECTION- 1) : DOWNSTREAM UNITS- LDPE/PPU/PTD

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SUB- SECTION-1 (I) PIPING RELATED MAINTENANCE ACTIVITIES

SL NO	ITEM DESCRIPTION	UOM	QNTY	RATE (INR)	AMOUNT (INR)
	Opening and boxing up of Box Type Manhole Cover				
15.10	Static equipment's Manhole Opening of all sizes & shapes opening, cleaning as per EIC's instruction and box up with proper packing's etc. as per instruction of engineer-in-charge Opening of Manhole.; Cleaning of mating surfaces with suitable cleaning media.; Minor repair of flange/ blind/Pipe or on nozzle counterpart at seating area which may cause leakage. Shifting of Manhole flange to the work shop, after repair again shifting to site, in case it's taken for repair in workshop, is also included.; Replacement of hardware (i.e. fasteners, gaskets etc.), if required.; Cleaning of fasteners & its threads with suitable cleaning media; Final box up with new gaskets and new/cleaned fasteners and tightening; Hot bolting of the flanged joints as per requirement.	NOS	30		
15.11	Opening and box up of pontoon manway covers Opening and box up of pontoon manway covers by using the U-type lifting lugs; checking of neoprene gasket; changing it if reqd.; putting the cover lock in proper position to complete the job in all respect as per the instruction of E-I-C.	NOS	10		
15.12	Expansion below Maintenance All size expansion below opening, fabric part dismantling in RM, replacement, refitting, gasket cutting from sheet, Stud, Bolt Cleaning, complete all job related to expansion joint to the satisfaction of EIC.	RM	20		
	WRAPPING COATING				
15.13	Wrapping and coating in underground piping including application of primer; as specified by BCPL Inspection deptt.; Supply of Wrapping coating and supply of material and all tools & tackles including heating torch in the contractors scope; as per instruction of E-I-C	SQM	100		
	Immediate Hot job group mobilisation				
15.14	Immediate Hot job group mobilisation with all resources like Diesel generator/ Motor generator/ Rectifier as per requirement, Gas cutting sets with cylinders, Grinding machines, extention boards, power distribution board with ELCB etc.as required for carrying out Hot jobs.	OCC	5		
15.15	TIGHTENING OF ANY JOINTS (FLANGES/BLINDS/MANHOLE COVERS/THREADED JOINTS/PEEPHOLE COVER ETC. AS PER FLANGE/ PIPE SIZE/ MANHOLE SIZE FOR ANY PURPOSE WITH PARTIAL REPLACEMENT OF FASTENERS ETC, IF REQUIRED.	NOS	20		
15.16	Making new thread/repairing of damaged thread is pipes/equipments of different sizes using hand tap, extraction of broken bolts/screws as per site requirement	NOS.	50		
15.17	Drilling new holes on pipes/equipments, expansion of existing of holes as per site requirement	NOS.	100		
PART-B SECTION-1 (I) -DOWNSTREAM-PIPING ACTIVITIES TOTAL AMOUNT (INR.)=					

Applicable Service tax in %

%

(i) Evaluation shall be done on the basis of net of amount . Service tax shall be applicable as per prevailing Govt. rules at the time of invoicing.

ii) Considering nature of job in this section (Part-B, Section 1(i)), applicable rate of Service Tax is 70% on 14% i.e. 9.80%



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PART-B (SECTION 1): DOWNSTREAM UNITS- LLDPE/PPU/BAGGING AREAS

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SUB- SECTION- 1(ii)- MECHANICAL EQUIPMENTS RELATED MAINTENANCE ACTIVITIES

<u>SL NO</u>	<u>ITEM DESCRIPTION</u>	<u>UOM</u>	<u>QNTY</u>	<u>RATE (INR)</u>	<u>AMOUNT (INR)</u>
1	<u>DIAPHRAGM PUMPS MAINTENANCE ACTIVITIES</u>				
	<u>Gland Packing tightening of all DIAPHRAGM pumps :</u>				
1.1	Removal of guards, if required; Removal of dirt/grease/rust/foreign particles as per requirement; Tightening of gland including replacement of fasteners, if required.	NOS	25		
	<u>Gland Packing replacement of all DIAPHRAGM pumps:-</u>				
1.2	Removal of guards, if required; Dismantling of fluid end, as per requirement; Cutting of gland packing to size, if required; Removal of dirt/grease/rust/foreign particles; Inspection/Replacement of Lantern rings/ Bushes/Other internals; Gland Packing replacement; Any sort of repair/replacement, as per requirement; Assembly.	NOS	25		
	<u>Oil seal(s) replacement of all DIAPHRAGM pumps :</u>				
1.3	Removal of guards, if required; Dismantling of power end; Removal of dirt/grease/rust/foreign particles; Inspection/Replacement of internals; Oil seal(s) replacement; Any sort of repair/replacement, as per requirement; Assembly; Alignment; LO flushing & lubricating bearings/ bushings etc.	NOS	25		
	<u>Removal and fixing of coupling hub of all type of DIAPHRAGM pumps</u>				
1.4	Removal of coupling guard; Removal of coupling spacer; Removal of coupling hub(s); Removal of dirt/grease/rust/foreign particles etc; Any sort of repair/replacement, as per requirement; Assembly of coupling hub(s); Alignment; Assembly of coupling spacer & coupling Guard	NOS	25		



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SUB- SECTION- 1(ii)- MECHANICAL EQUIPMENTS RELATED MAINTENANCE ACTIVITIES

SL NO	ITEM DESCRIPTION	UOM	QNTY	RATE (INR)	AMOUNT (INR)
1.5	Suction and Discharge NRV Inspection / replacement of all DIAPHRAGM pumps Dismantling of all suction and discharge NRVs / Check valves; Inspection/overhauling/replacement of valves as required; Inspection of other fluid end parts as required; Removal of dirt/grease/rust/foreign particles etc; Any sort of repair/replacement, as per requirement; Assembly	NOS	50		
1.6	Complete overhauling of all DIAPHRAGM pumps Complete dismantling of pump; Shifting of pump to the workshop for repair and back to the position; Cleaning & checking/replacement of suction & discharge valves, piston, plungers, gland packing, diaphragms, oil seal, bush, gland & coupling etc.; Maintenance of stroke adjustment assembly; Maintenance of lubricator assembly; Maintenance /Inspection of all other accessories of pump; Setting of PRVs, checking of damper pressure & charging of N2; Charging of Oil in Oil chambers; Connection of suction & discharge lines with proper gasket and fasteners to pump nozzles; Alignment of pump & motor or pump & gear box and gear box and motor in case of pumps having gear box; Opening of both suction and discharge filter, cleaning & box up.; Flushing & charging of OIL & grease nipples/housings etc(not applicable for equipments having separate oil reservoirs). Job is to be done as per instruction of BCPL representative ; all relevant data are to be recorded and handed over to concerned engineer in soft and hard copy	NOS	20		
1.7	Preventive Miant.for diaphragm pumps Preventive Miant.for reciprocating/plunger/diaphragm/dosing pumps: Carrying out decoupling & coupling including guard open & box-up, Cold alignment, Strainer cleaning including opening & box-up of flanges, All accessories opening, cleaning & box-up, Lube oil/Grease checking & filling etc. complete and record the job as per preventive maintenance check list	NOS	25		
1.8	Stroke adjustment knob repair of Diaphragm Pumps Dismantling of adjustment knob(s); Removal of dirt/grease/rust/foreign particles etc; Minor repair/replacement, as per requirement; Assembly.	NOS	20		
1.9	Diaphragm replacement of Diaphragm Pumps Dismantling of all diaphragms as required; Inspection of diaphragms/ internals as required; Removal of dirt/grease/rust/foreign particles etc; Any sort of repair/replacement, as per requirement; Assembly	NOS	20		



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SL NO	ITEM DESCRIPTION	UOM	QNTY	RATE (INR)	AMOUNT (INR)
2	MAINTENANCE OF DUPLEX/TRIPLEX PUMPS MAINTENANCE				
	Change Packingset/Plunger/Bush/sealseach plunger of duplex/triplex pump				
2.1	Change Packing set /Plunger/ Bush /seals each plunger of pump; Cleaning/Replacement of suction & discharge NRVs of individual pump; Replacement of diaphragm of each individual pump; Cleaning of plunger /diaphragm head assembly & replacement /cleaning of diaphragm, suction & discharge NRVs if required, Job is to be done as per instruction of BCPL representative ; all relevant data are to be recorded and handed over to concerned engineer in soft and hard copy	NOS	20		
	CHANGE OF GLAND PACKINGS SET /PLUNGER/BUSH/SEAL OF EACH PLUNGER DUPLEX/TRIPLEX PUMP				
2.2	Replacement of plunger packing"s sets etc. in each pump of duplex / triplex pump.	NOS	20		
	CLEANING /REPLACEMENT OF SUCTION & DISCHARGE NRVs OF INDIVIDUAL PUMP OF DUPLEX & TRIPLEX PUMP				
2.3	Cleaning/Repla. of suction & discharge NRVs of individual pump; Replacement of diaphragm of each individual pump; Cleaning of plunger /diaphragm head assembly & replacement /cleaning of diaphragm, suction & discharge NRVs if required, Job is to be done as per instruction of BCPL representative ; all relevant data are to be recorded and handed over to concerned engineer in soft and hard copy	NOS	20		
	GLAND LEAKAGE RECTIFICATION BY TIGHTENING/REPLACEMENT AS PER REQUIREMENT				
2.4	Removal of gland and old packing material; Cutting of new packing material to size; Assembly of gland with new packing material	NOS	20		
3	MAINTENANCE OF SINGLE STAGE/ MULTISTAGE HORIZONTAL/VERTICAL CENTRIFUGAL/SCREW/GEAR PUMPS/BLOWERS/AGITATORS				
	Preventive Miant.for centrifugal / Rotary pump:				
3.1	Preventive Miant.for centrifugal / Rotary pump Carrying out decoupling & coupling including guard open & box-up, Cold & Hot alignment, Strainer cleaning including opening & box-up of flanges, All accessories opening/cleaning & box-up, Lube oil/ Grease checking & filling etc. complete and record the job as per the Preventive Maint. check list.	NOS	50		



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SL NO	ITEM DESCRIPTION	UOM	QNTY	RATE (INR)	AMOUNT (INR)
3.2	Removal & re-assembly of both coupling hubs (per coupling)	NOS	50		
	Removal of coupling guard; Removal of coupling Spacer/belt/chain, Inspection of the coupling; Removal of dirt/Grease/Rust/Foreign particles etc; Any sort of repair/replacement as per requirement, Alignment; Assembly of Coupling & Coupling guard, Job is to be done as per instruction of BCPL representative ; all relevant data are to be recorded and handed over to concerned engineer in soft and hard copy				
3.3	Alignment of Pumps/gear boxes with drive machine:				
	Removal of coupling guard ; Removal of coupling spacer, Alignment of pump with the coupling using suitable method including both cold and hot alignment of all pumps as per requirement. includes all arrangements of tool and tackle as may be required; Cleaning of parts as required; Removal of dirt/grease/rust/foreign particles etc.; Any sort of repair/replacement, as per requirement.; Assembly of coupling & coupling guard ;Offering BCPL for inspection if required ; shifting of all spares from workshop/store.; Job is to be done as per instruction of BCPL representative, all relevant measurement and data are to be recorded and handed over to concerned engineer in soft and hard copy.				
3.3.1	Up to 10 KW	NOS	30		
3.3.2	10 KW to 30 KW	NOS	25		
3.3.3	Above 30 KW	NOS	20		
3.4	Mechanical seal cooler cleaning (per pump):	NOS	50		
	The work involves the blinding / de-blinding the cooler nozzle flanges; cleaning of shell & tube bundle of the cooler by tube bundle removal; Cleaning & box up hydro test (if required.) as per instruction of EIC.; dismantling, removal and cleaning of seal pot and associated lines and Boxing up the same after thorough cleaning.				



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SL NO	ITEM DESCRIPTION	UOM	QNTY	RATE (INR)	AMOUNT (INR)
3.5	Mechanical seal replacement job:				
	Removal of coupling guard; Removal of coupling Spacer/belt/chain; Recording the alignment readings(with out adjustments); Dismantling of equipment & connected pipings for the purpose of Mechanical Seal inspection/replacement; Dismantling of Seal Flushing line cooler, Cleaning of lines, NRVs, Strainers, valves & Coolers.It also includes re-fixing of lines after proper cleaning; Mechanical seal inspection/replacement; Removal of dirt/Grease/Rust/Foreign particles etc; Any sort of repair/replacement as per requirement; Assembly of Pump; Flushing/charging of Oil/Seal Flushing Fluid, Cleaning Oilers; Alignment; Assembly of Coupling & Coupling guard, Job is to be done as per instruction of BCPL representative ; all relevant data are to be recorded and handed over to concerned engineer in soft and hard copy	NOS	50		
3.6	Decoupling & Coupling of spacer type flexible coupling				
	Decoupling & Coupling of spacer type flexible coupling excluding spider type for all pumps, gear box, clutch, turbine, motor etc. including removal and box up and proper alignment of coupling guard, all arrangements of tool and tacksels as may be required;Cleaning of parts, all spares transportation from workshop/store etc. complete the work as per the satisfaction of E.I.C.	NOS	50		
3.7	Decoupling & Coupling of the spider type coupling				
	Decoupling & Coupling of the spider type coupling for all pumps, gear box, clutch, turbine, motor etc. including removal and box up & of coupling guard, all arrangements of tool and tacksels as may be required;Cleaning of parts, all spares transportation from workshop/store etc. complete the work as per the satisfaction of E.I.C.	NOS	20		
3.8	Alignment spider type coupling				
	Alignment of pump with lovejoy type coupling using suitable method including both cold and hot alignment all pumps. includes all arrangements of tool and tacksels as may be required; Cleaning of parts as required ;Offering BCPL for inspection if required ; shifting of all spares from workshop/store; to &fro transportation from workshop/store. Job is to be done as per instruction of BCPL representative ;all relevant measurement and data are to be recorded and handed over to concerned engineer in soft and hard copy	NOS	20		
3.9	Gland tightening of all pumps per stuffing box:				
	Gland tightening of all pumps per stuffing box for shaft/plunger dia of all size includes all arrangements of tool and tacksels as may be required; Cleaning of parts/flushing of auxiliary lines as required ;Offering BCPL for inspection if required ; shifting of all spares from workshop/store complete the job as per satisfaction of E.I.C.	NOS	20		



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SL NO	ITEM DESCRIPTION	UOM	QNTY	RATE (INR)	AMOUNT (INR)
3.10	Gland repacking of all pumps per stuffing:				
	Gland repacking of all pumps per stuffing box for shaft/plunger of all sizes includes all arrangements of tools & tackles as required; Cleaning of parts/flushing of auxiliary lines as required ;Offering BCPL for inspection if required ; shifting of all spares from workshop/store complete the job as per satisfaction of E.I.C.	NOS	20		
3.11	Motor dismantling & erection all pumps.				
	Motor dismantling & erection all pumps.includes all arrangements of tool and tackles as may be required;Cleaning of parts/flushing of auxiliary lines as required ;Offering BCPL for inspection if required ; shifting of all spares from workshop/store; to &fro transportation from workshop/store; . Job is to be done as per instruction of BCPL representative ,all relevant measurement and data are to be recorded and handed over to concerned engineer in soft and hard copy	MT	1000		
3.12	Bearing Replacement				
	Removal of Coupling Guard; Removal of Coupling Spacer/belt/chain; Recording the alignment readings(with out adjustments); Dismantling of equipment, Bearing housing & connected piping for the purpose of Bearing inspection/replacement; Removal of Seal flushing system; Bearing inspection/replacement; Removal of dirt/Grease/Rust/Foreign particles etc; Any sort of repair/replacement as per requirement.; Assembly of equipment/bearing housing; Flushing & charging of Oil (not applicable for pump having separate oil reservoir) /Seal flushing fluid /cleaning oilers/priming of MOP etc.; Alignment before & after maintenance; assembly, Job is to be done as per instruction of BCPL representative , all relevant data are to be recorded and handed over to concerned engineer in soft and hard copy				



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SUB-SECTION- 1(ii)- MECHANICAL EQUIPMENTS RELATED MAINTENANCE ACTIVITIES

SL NO	ITEM DESCRIPTION	UOM	QNTY	RATE (INR)	AMOUNT (INR)
3.12.1	Up to 10 KW	NOS	40		
3.12.2	10 KW to 30 KW	NOS	30		
3.12.3	Above 30 KW	NOS	20		
3.13	Complete Overhauling				
	Removal of Coupling Guard;Removal of Coupling Spacer/belt/chain; Recording the alignment readings(with out adjustments); Dismantling of equipment & connected piping for the purpose of complete overhaul; Complete dismantling of pump; Shifting of pump to the workshop for repair and back to the position; Maintenance/inspection of all other accessories of pump; Flushing & charging of oil (not applicable for pump having separate oil reservoir)/ seal flushing fluid, cleaning oilers, priming of MOP etc. ; Connection of suction/discharge lines with proper gasket, fastener to pump nozzles; Alignment of pump & motor or pump & gear box and gear box and motor in case of pumps having gear box				
		NOS	40		
		NOS	30		
		NOS	20		
3.14	Maintenance of Screw Pumps				
3.14.1	Lubrication of timing gears of Screw Pumps				
	Check, refill and if required replace the lube oil in the gear housing & the rear cover of the Screw Pumps to the correct level with the oil specified by the manufacturer	L	1000		



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SUB- SECTION- 1(ii)- MECHANICAL EQUIPMENTS RELATED MAINTENANCE ACTIVITIES

SL NO	ITEM DESCRIPTION	UOM	QNTY	RATE (INR)	AMOUNT (INR)
3.14.2	Replacement of Screw Pump Packing as per requirement	Ea	50		
3.14.3	Timing Gear Replacement Take the old timing gear off the shaft and push the replacement gears half way on; put the key in the slotted gear; adjust the free, unslotted timing gear until the desired screw clearance is obtained; replace the rotating element and reassemble the pump with the new timing gear	NOS	5		
3.14.4	Complete Disassembly of Screw Pumps Dismantling of the Screw Pump- Close the suction and discharge valves, Disconnect the coupling and suction and discharge flange; Timing gear disassembly, rotor removal, removal of bearing, maintenance procedure as per pumps manual	NOS	5		
3.14.5	Re-assembly of Screw Pumps Install/replace the bearings; check the rotation; removal of dirt, grease, other particles; adjust the clearance of the screws; install the timing gears as per manual, reassemble of the pump	NOS	5		
4	MAINTENANCE OF FANS/BLOWERS				
4.1	COMPLETE O/ H OF BLOWER/FAN All activities required for complete over hauling of equipment e.g. belt/coupling removal, dismantling of bearings/fan casing/ internals etc, as per instruction of EIC, including repair/replacement & modification as per requirement; Alignment before and after maintenance; Opening of both suction and discharge filter, cleaning and box up; Flushing / charging of oil & grease, cleaning oilers/grease nipples/housings etc.(not applicable for Equipment having separate oil reservoir)				
4.1.1	upto 50 KW	NOS	8		
4.1.2	ABOVE 50 KW	NOS	5		



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SL NO	ITEM DESCRIPTION	UOM	QNTY	RATE (INR)	AMOUNT (INR)
4.2	CLEANING OF SUCTION & DISCHARGE SILENCERS Removal of suction & discharge filter; Clean /replace suction /discharge filter. Box up.	NOS	10		
4.3	Fin fan Preventive checks Preventive Checks <Belt tension cheking;Alignment checking structure bolt checking ;greasing> of air fin cooler fan including all arrangements of tool and tackles as may be required;Cleaning of parts as required ;Offering BCPL for inspection if required ; shifting of all spares from workshop/store; Job is to be done as per instruction ofBCPL representative ;all relevant measurement and data are to be recorded and handed over to concerned engineer in soft and hard copy	NOS	20		
5	MAINTENANCE OF RECIPROCATING / DIAPHRAGM COMPRESSORS:				
5.1	Dismantling of Head Cover For replacement of Diaphragms and "O" Rings: Dismantling of suction/discharge valves and associates piping ; Cleaning /inspection of valves and piping"s; Replacement of valve, if required.; Dismantling of top covers, inspection of diaphragm and O rings for any damage.; Replacement of diaphragms, O rings, if required.; Boxing up & connection of all associate piping.; Adjustment of PRVs.; Checking/charging of lube oil.; Removal & refixing of belts from pulley, if required, Job is to be done as per instruction of BCPL representative ; all relevant data are to be recorded and handed over to concerned engineer in soft and hard copy				
5.1.1	Upto 100 KW	NOS	8		
5.1.2	ABOVE 100 KW	NOS	6		



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SUB- SECTION- 1(ii)- MECHANICAL EQUIPMENTS RELATED MAINTENANCE ACTIVITIES

SL NO	ITEM DESCRIPTION	UOM	QNTY	RATE (INR)	AMOUNT (INR)
5.2	REPLACEMENT OF GEAR /PISTON LUBE OIL PUMP	NOS	10		
	Opening of side cover of compressor, draining of oil, dismantling of pump.; Replacement of the pump.; Replacement of oil.; Cleaning of filters and box up.; Adjustment of PRVs, if required, Job is to be done as per instruction of BCPL representative ; all relevant data are to be recorded and handed over to concerned engineer in soft and hard copy				
5.3	Compressor all stage cylinder Suction valve including cleaning of suction strainers:	NOS	20		
	Compressor all stage cylinder Suction valve (including un loader removal & box-up)/ cylinder Discharge valve/Discharge line NRV removal, overhauling & box-up including all arrangement of resources, cleaning of parts, to & fro transportation of all spares/ parts from store/workshop, job is to be done as per instruction of E.I.C., all measurements and data are to be recorded and handed over to concerned engineer in soft & hard copy.				
5.4	Repair of unloading device of compressor:	NOS	20		
	Repair of unloading device of compressor suction valves & clearance pocket including removal & box-up, all arrangements of resources, to & fro transportation of all spares/ parts from store/workshop, job is to be done as per instruction of E.I.C., all measurements and data are to be recorded and handed over to concerned engineer in soft & hard copy.				
5.5	Piston Rod Maintenance:	NOS	10		
	Piston rod main packing/ intermediate packing/ oil scrapper ring removal & assembly after repair for all compressor including opening & box-up of side covers & all arrangement of resources, cleaning of parts, to & fro transportation of all spares/ parts from store/workshop, clearance check between piston head and cylinder head. job is to be done as per instruction of E.I.C., all measurements and data are to be recorded and handed over to concerned engineer in soft & hard copies				
5.6	Maintenance of Screw Compressors				
5.6.1	Coupling re-installation and alignment of Screw Compressor	NOS	16		
	Removal of coupling; Dis mantling of bearing; Removal of dirt/Grease/Rust/Foreign particles etc; Any sort of repair/replacement as per requirement.; Assembly of equipment/bearing housing; Flushing & charging of Oil (not applicable for pump having separate oil reservoir) /Seal flushing fluid /cleaning oilers/priming of MOP etc.; Alignment before & after maintenance; assembly, Job is to be done as per instruction of BCPL representative ; all relevant data are to be recorded and handed over to concerned engineer in soft and hard copy				



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SUB- SECTION- 1(ii)- MECHANICAL EQUIPMENTS RELATED MAINTENANCE ACTIVITIES

SL NO	ITEM DESCRIPTION	UOM	QNTY	RATE (INR)	AMOUNT (INR)
	Inspection and replacement of Bearings of Screw Compressor				
5.6.2	Dismantling of equipment, Bearing housing & connected piping for the purpose of Bearing inspection/replacement; Removal of Seal flushing system; Bearing inspection/replacement; Removal of dirt/Grease/Rust/Foreign particles etc; Any sort of repair/replacement as per requirement.; Assembly of equipment/bearing housing; Flushing & charging of Oil (not applicable for pump having separate oil reservoir) /Seal flushing fluid /cleaning oilers/priming of MOP etc.; Alignment before & after maintenance; assembly, Job is to be done as per instruction of BCPL representative ; all relevant data are to be recorded and handed over to concerned engineer in soft and hard copy	NOS	16		
5.7	Maintenance of Centrifugal Compressors				
	Coupling re-installation and alignment of Centrifugal Compressor				
5.7.1	Removal of coupling; Dis mantling of bearing; Removal of dirt/Grease/Rust/Foreign particles etc; Any sort of repair/replacement as per requirement.; Assembly of equipment/bearing housing; Flushing & charging of Oil (not applicable for pump having separate oil reservoir) /Seal flushing fluid /cleaning oilers/priming of MOP etc.; Alignment before & after maintenance; assembly, Job is to be done as per instruction of BCPL representative ; all relevant data are to be recorded and handed over to concerned engineer in soft and hard copy	NOS	6		
	Inspection and replacement of Bearings of Centrifugal Compressor				
5.7.2	Dismantling of equipment, Bearing housing & connected piping for the purpose of Bearing inspection/replacement; Removal of Seal flushing system; Bearing inspection/replacement; Removal of dirt/Grease/Rust/Foreign particles etc; Any sort of repair/replacement as per requirement.; Assembly of equipment/bearing housing; Flushing & charging of Oil (not applicable for pump having separate oil reservoir) /Seal flushing fluid /cleaning oilers/priming of MOP etc.; Alignment before & after maintenance; assembly, Job is to be done as per instruction of BCPL representative ; all relevant data are to be recorded and handed over to concerned engineer in soft and hard copy	NOS	6		
5.8	Overhauling of all types of compressors during emergency shutdown.	NOS.	10		



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SL NO	ITEM DESCRIPTION	UOM	QNTY	RATE (INR)	AMOUNT (INR)
6	EQUIPMENT LUBRICATION & LUBRICANTS HANDLING				
6.1	<u>Lube oil change/charging</u> Lube oil Changing/charging of all equipments; existing oil draining, including complete draining, flushing if required and fresh charging of oil complete the job as per instruction of EIC	L	3500		
6.2	<u>Constant level Oiler/sight glass/level indicator changing</u> Constant level Oiler/sight glass/level indicator changing all pumps. includes all arrangements of tool and tacksels as may be required;Offering BCPL for inspection if required ; shifting of all spares from workshop/store; Job is to be done as per instruction of BCPL representatives	NOS	50		
6.3	<u>Bearing lubrication checking, refilling or leakage attending/Oil Rate Adjustment in the bearings</u> Check the bearing Lubrication, Check the Oil Level in the bearings, refilling as per requirement or any leakages observed to be attended	NOS	25		
6.4	<u>OIL TOP UP IN CONSTANT OIL LEVELER OF EQUIPMENTS AS PER SCHEDULE/REQUIREMENT</u> OIL TOP UP IN CONSTANT OIL LEVELER OF EQUIPMENTS AS PER SCHEDULE/REQUIREMENT as per requirement	NOS	10		
6.5	<u>CHARGING/ DRAINING OIL TO/ FROM OIL RESERVOIR AS PER REQUIREMENT WHICH INCLUDES THE FOLLOWING ACTIVITIES:</u> Transportation / handling from BCPL's designated stores/other storage area to site-stores.; Shifting from site-storage point to the point of application & back to the storage point or to other designated place the flushing/draind oils with in the plant area as per instruction of ENGINEER-IN-CHARGE.; Shifting & connecting transfer pump/Centrifuge/grease gun if required for charging/drainng / applying from point of storage to point of application & shifting it back to its original place after Removal of dirt/grease/rust/foreign particles.; All associated Connections/Dis-connections of Hoses, Blinding/De-Blinding of Flanged joints, Opening /Boxing up of Threaded/Other type of joints, as applicable for job completion	L	10000		
6.6	<u>GREASING OF GEAR BOX/ BEARINGS BY HAND/ GREASE GUN AS PER REQUIREMENT</u>	KG	500		



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SUB- SECTION- 1(ii)- MECHANICAL EQUIPMENTS RELATED MAINTENANCE ACTIVITIES

SL NO	ITEM DESCRIPTION	UOM	QNTY	RATE (INR)	AMOUNT (INR)
7	DOWNSTREAM SPECIAL EQUIPMENTS				
	MAINTENANCE OF ROTARY FEEDER				
7.1	Removal of chain, sprocket, idler etc, Dismantling of rotary feeder; Inspection /repair of rotor; Maintenance of gearbox, if required; Reassembly; Replacement of lubricants.	NOS	10		
7.2	ROTARY FEEDER MAINTENANCE FOR JAMMING	NOS	10		
	CLEANING /REPLACEMENT OF BAG FILTERS/CARTRIDGE FILTERS				
7.3	Opening of top covers /side covers; Cleaning of individual bag by air, or any other means, as per instruction; Repair/replacement of damaged bags & cages if required; Box up; This includes air/nitrogen hose connection & other associated jobs required for cleaning/replacement of bag filters.	NOS	50		
	REPLACEMENT OF ROLLER BEARING OF PELLETIZER SHAFT				
7.4	Die plate housing and allied piping to be dismantled; Motor to be decoupled and shift at side.; Cutter hub assembly to be taken out, pelletiser shaft to be taken out, top seal, bottom seal and roller bearing to be removed/ replaced; After replacing bearing seals, coupling to be fixed to the pelletiser shaft and to be coupled with motor in position; Alignment of the shaft to the die plate, run out of the shaft to be checked after getting clearance cutter hub assembly and pelletiser housing to be boxed up.; Removal of polymer from die plate during die purging.; Material to be shifted from warehouse site & site to warehouse.; It includes disassembly and assembly of all associates accessories if required.	NOS	5		
7.5	MAINTENANCE OF EXTRUDER				
7.5.1	Cutter blade alignment, cutter blade assembly, disassembly, replacement	NOS	5		
7.5.2	Cutter unit alignment (hot & cold), alignment of cutter shaft and motor for any abnormality.	NOS	5		



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SUB-SECTION- 1(iii)- MECHANICAL EQUIPMENTS RELATED MAINTENANCE ACTIVITIES

SL NO	ITEM DESCRIPTION	UOM	QNTY	RATE (INR)	AMOUNT (INR)
7.5.3	Compactor bag filter cleaning including dismantling & box up	NOS	5		
7.5.4	Melt seal/ ABC seal repair / replacement / attending leakage from rotary joints or hot oil unit	NOS	10		
7.5.5	Cleaning of all panel filters and all screens for Centrifugal rotary dryer	NOS	10		
7.6	MAINTENANCE OF VENT DEVICE INCLUDING DECOUPLING/ COUPLING & BOXUP FOR EXTRUDER Vent device flange connections to be disconnected.; Strahmen valve to be removed.; Decoupling of gear box from vent device, screws and bearings and gears trains to be inspect / replaced if required.; Gear box to be checked and after rectification to be boxed up; Maintenance/replacement of thrust bearing.; De-chocking of vent device screw by manual rotation.; Coupling and alignment of Vent Device to be done.; Replacement of lubricants.	NOS	5		
7.7	Maintenance of centrifuse				
7.7.1	Feed pipe mechanical seal replacement /repair	NOS	5		
7.7.2	Adjustment of WEIR Height including opening and boxing of inspection cover	NOS	5		
7.7.3	Centrifuge Chute cleaning	NOS	5		
7.8	INSPECTION OF SCREEN OF SPIN DRYER It includes opening of side clamp and checking of screen for any damage/any leakage of pellets and minor rectification if required.	NOS	5		
7.9	CLEANING OF SCREEN OF DELUMPER SYSTEM Top cover to be opened; Any foreign materials in the screen to be cleaned, water spray nozzles to be cleaned, side Teflon idlers with bearing to be checked and replace if required and top cover to be boxed up.	NOS	5		



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SUB-SECTION- 1(ii)- MECHANICAL EQUIPMENTS RELATED MAINTENANCE ACTIVITIES

SL NO	ITEM DESCRIPTION	UOM	QNTY	RATE (INR)	AMOUNT (INR)
7.10	INSPECTION/CLEANING OF SCREEN OF DELUMPER AND DEWATERING SYSTEM				
	Top cover to be opened; Any foreign materials in the screen to be cleaned, water spray nozzles to be cleaned, side Teflon idlers with bearing to be checked and replace if required and top cover to be boxed up; Dewatering hinged cover to be removed, screen to be opened and cleaned and boxed up.	NOS	5		
7.11	REPLACEMENT OF SCREEN / MOTOR FOR FINE SEPARATOR/CLASSIFIER:				
	It includes dismantle of fine separator/classifier for replacement of damaged screen/ problem in motor; Dismantle of motor and shifting the motor to ground floor for repair after rectification/replace same to be boxed up; All necessary arrangement for lifting of motor to be made; Shifting of new screen from store to site and damage one to be taken back as per instruction.	NOS	5		
7.12	REPLACEMENT OF SPRING OF VIBRATING SCREEN				
	It includes only replacement of any damaged spring of vibrating screen by loosening the bolts in position.	NOS	5		
7.13	DISMANTLING OF DIE PLATE HOUSING AND CUTTER HUB ASSY				
	In extruder, die plate cover to be lifted.; All allied piping connection to be dismantled for removal of die plate housing cover.; Cutter hub assembly to be removed for die freezing if any abnormality/ checking required.; After getting clearance, cutter blade to be fixed and uniform gap between die plate & cutter blade to be checked.; Cutter housing to be fixed, pelletiser bearing play to be checked.; It also includes removal / cleaning of polymer from die plate during die purging.; Shifting of cutter hub assembly & die plate housing to ware house and back to site if required.; Box up of housing and associate piping"s.	NOS	5		
7.14	CLEANING OF FINE SEPARATOR/CLASSIFIER SCREEN BY WATER/AIR HOSE CONNECTION	NOS	5		
7.15	VENT POT CLEANING AND BOXED UP	NOS	5		



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SL NO	ITEM DESCRIPTION	UOM	QNTY	RATE (INR)	AMOUNT (INR)
7.16	ADSORBER TOP COVER (INCLUDING SIDE BLIND) OPENING AND BOXING UP	NOS	5		
7.17	REPLACEMENT/INSPECTION OF BELTS /CHAIN WITH NEW SET	NOS	5		
7.18	HOSE FIXING (FIXING OF HOSE FROM SOURCE POINT OF APPLICATION & REMOVAL ETC.) OF ANY TYPE & SIZE AS PER REQUIREMENT WHICH INCLUDES THE FOLLOWING ACTIVITIES: De-blinding of Source point & point of application.; Making hose to hose joints for reaching point of application from Source Point; Fixing of hose from Source point to the point of application; Clamping properly with wire / clamp or any other suitable fasteners to avoid leakage with new gasket/packing including cutting of the same; Removal of all Hose joints.; Removal of hose from Point of application & Source Point and shifting the same to Hose storage area.; Blinding of Source point & point of application	NOS	20		
7.19	DRUM CONNECTION (OIL / CHEMICAL DRUM) AS PER REQUIREMENT, WHICH INCLUDES THE FOLLOWING ACTIVITIES: Removal of previous threaded/flanged connections from empty drum or, associated piping/tubing; Removal of dirt/grease/rust/foreign particles from threaded joint area; Threaded/flanged joint connection in new drum with Teflon tape/gaskets and fasteners etc. as may be the case.	NOS	20		
7.20	STATIC/ ROTARY EQUIPMENT CLEANING (OUTER SURFACE) AS PER SCHEDULE/ REQUIREMENT WITH WATER JET / AIR / STEAM / NITROGEN / DIESEL / COTTON WASTE / MARK-IN CLOTH etc.	NOS	50		
8	MAINTENANCE OF STATIC EQUIPMENTS				
8.1	MAINTENANCE OF HEAT EXCHANGERS WITH BUNDLES OUT INCLUDING PLATE TYPE AND SPIRAL TYPE				
8.1.1	HE Overhauls, tubes up to 200, bundle out Heat Exchanger overhauling, No of tubes up to 200 and tube bundle requires to be taken out, Job includes dismantling of Heat Exchanger, Pulling out the tube bundle, Cleaning of the tubes inside & outside, shell, fasteners etc., inserting the tube bundle, testing the heat exchanger, box up/dropping of test ring, plugging of leaky tubes, if any and retesting, boxing up etc. as per instruction of EIC	Nos	25		



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SL NO	ITEM DESCRIPTION	UOM	QNTY	RATE (INR)	AMOUNT (INR)
8.1.2	HE Overhauls, tubes up to 201-400, bundle out				
	Heat Exchanger overhauling, No of tubes 201 to 400 and tube bundle requires to be taken out, Job includes dismantling of Heat Exchanger, Pulling out the tube bundle, Cleaning of the tubes inside & outside, shell, fasteners etc., inserting the tube bundle, testing the heat exchanger, box up/dropping of test ring, plugging of leaky tubes, if any and retesting , boxing up etc. as per instruction of EIC	Nos	25		
8.1.3	HE Overhauls, tubes up to 401-600, bundle out				
	Heat Exchanger overhauling, No of tubes ranging from 401 to 600 and tube bundle requires to be taken out, Job includes dismantling of Heat Exchanger, Pulling out the tube bundle, Cleaning of the tubes inside & outside, shell, fasteners etc., inserting the tube bundle, testing the heat exchanger, box up/dropping of test ring, plugging of leaky tubes, if any and retesting , boxing up etc. as per instruction of EIC	Nos	25		
8.1.4	HE Overhauls, tubes up to 601-800, bundle out				
	Heat Exchanger overhauling, No of tubes ranging from 601 to 800 and tube bundle requires to be taken out, Job includes dismantling of Heat Exchanger, Pulling out the tube bundle, Cleaning of the tubes inside & outside, shell, fasteners etc., inserting the tube bundle, testing the heat exchanger, box up/dropping of test ring, plugging of leaky tubes, if any and retesting , boxing up etc. as per instruction of EIC	Nos	10		
8.1.5	HE Overhauls, tubes up to 801-1500, bundle out				
	Heat Exchanger overhauling, No of tubes ranging from 801 to 1500 and tube bundle requires to be taken out, Job includes dismantling of Heat Exchanger, Pulling out the tube bundle, Cleaning of the tubes inside & outside, shell, fasteners etc., inserting the tube bundle, testing the heat exchanger, box up/dropping of test ring, plugging of leaky tubes, if any and retesting , boxing up etc. as per instruction of EIC	Nos	10		
8.2	MAINTENANCE OF HEAT EXCHANGERS WITH BUNDLES NOT TAKEN OUT INCLUDING PLATE TYPE AND SPIRAL TYPE				
	HE Overhauls, tubes up to 200, bundle not taken out				
8.2.1	Heat Exchanger overhauling, No of tubes up to 200 and tube bundle does not require to be taken out, Job includes opening of Heat Exchanger Covers, Cleaning of the tubes fasteners etc., testing the heat exchanger, box up/dropping of test ring, plugging of leaky tubes, if any and retesting , boxing up etc. as per instruction of EIC	Nos	25		



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SL NO	ITEM DESCRIPTION	UOM	QNTY	RATE (INR)	AMOUNT (INR)
8.2.2	HE Overhauls, tubes up to 201 to 400, bundle not taken out	Nos	25		
	Heat Exchanger overhauling, No of tubes ranging from 201 to 400 and tube bundle does not require to be taken out, Job includes opening of Heat Exchanger Covers, Cleaning of the tubes fasteners etc., testing the heat exchanger, box up/dropping of test ring, plugging of leaky tubes, if any and retesting, boxing up etc. as per instruction of EIC				
8.2.3	HE Overhauls, tubes up to 401 to 600, bundle not taken out	Nos	25		
	Heat Exchanger overhauling, No of tubes ranging from 401 to 600 and tube bundle does not require to be taken out, Job includes opening of Heat Exchanger Covers, Cleaning of the tubes fasteners etc., testing the heat exchanger, box up/dropping of test ring, plugging of leaky tubes, if any and retesting, boxing up etc. as per instruction of EIC				
8.2.4	HE Overhauls, tubes up to 601 to 800, bundle not taken out	Nos	10		
	Heat Exchanger overhauling, No of tubes ranging from 601 to 800 and tube bundle does not require to be taken out, Job includes opening of Heat Exchanger Covers, Cleaning of the tubes fasteners etc., testing the heat exchanger, box up/dropping of test ring, plugging of leaky tubes, if any and retesting, boxing up etc. as per instruction of EIC				
8.2.5	HE Overhauls, tubes up to 801 to 1500, bundle not taken out	Nos	10		
	Heat Exchanger overhauling, No of tubes ranging from 801 to 1500 and tube bundle does not require to be taken out, Job includes opening of Heat Exchanger Covers, Cleaning of the tubes fasteners etc., testing the heat exchanger, box up/dropping of test ring, plugging of leaky tubes, if any and retesting, boxing up etc. as per instruction of EIC				
8.2.6	HE Overhauls, tubes more than 1500, bundle not taken out	Nos	10		
	Heat Exchanger overhauling, No of tubes more than 1500 and tube bundle does not require to be taken out, Job includes opening of Heat Exchanger Covers, Cleaning of the tubes fasteners etc., testing the heat exchanger, box up/dropping of test ring, plugging of leaky tubes, if any and retesting, boxing up etc. as per instruction of EIC				
8.3	Gasket replacement & Opening/ boxing up of end covers/dish ends: Shell & Tube Type Heat Exchangers				
	Opening & boxing up of end covers/dish ends for gasket replacement, inspection, attending leakages; It includes removal of all end covers/dish end and connecting nozzles; Cleaning of gasket seating area of end covers as well as exchanger/tube bundle.; Cleaning of fasteners; Box up of dish ends and all associated nozzles; Leak test				



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SCHEDULE OF RATES (SOR)

PART-B (SECTION 1): DOWNSTREAM UNITS- LLDPE/PPU/BAGGING AREAS

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SUB- SECTION- 1(ii)- MECHANICAL EQUIPMENTS RELATED MAINTENANCE ACTIVITIES

SL NO	ITEM DESCRIPTION	UOM	QNTY	RATE (INR)	AMOUNT (INR)
8.3.1	Up to 16"	NOS	40		
8.3.2	above 16"- Up to 36"	NOS	40		
8.3.3	above 36"	NOS	10		
8.4	Overhaul of Plate Frame Exchanger- Including Hydro-testing and Re-gasketing , Diaassembling & Assembling				
	Removal of cover plates.; Cleaning of both sides of each plate by wire brush and water spraying.; Fixing of gasket to the plate properly.; Tightening of end plates properly.; Wire brushes are in contractor's scope.	NOS	10		
8.5	Surface Condenser end cover opening & box up	NOS	10		
9	Maintenance of Vessels/ Coloumn /Filters				
9.1	Vessels Hydrottest in CUM:				
	Vessels Hydrottest in CUM: Making arrangement for hydrottesting/ pneumatic testing ; carrying out hydrottesting/pneumatic testing as specified including all other miscellaneous works like blinding & deblinding including supply of tools; tackles;Pressure gauge, testing pumps and manpower necessary to complete the job to the satisfaction of E.I.C.	NOS	50		
9.2	Vessel internal repair & cleaning in CUM				
	Vessel internal repair & cleaning in CUM	NOS	50		



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SUB-SECTION- 1(ii)- MECHANICAL EQUIPMENTS RELATED MAINTENANCE ACTIVITIES

<u>SL NO</u>	<u>ITEM DESCRIPTION</u>	<u>UOM</u>	<u>QNTY</u>	<u>RATE (INR)</u>	<u>AMOUNT (INR)</u>
9.3	Opening of dome cover, removal of bag filter and cages / cartridges, inspection, cleaning, replacement of bag filter/cartridge, re-installation, gasket replacement of dome cover and box up.	NOS.	48		
10	<u>MAINTENANCE ACTIVITIES OF BAGGING AREAS</u>				
	<u>Belt Conveyors / Trippers / Roller Conveyors maintenance</u>				
10.1	Checking and training the Belt for centrally running on pulleys and idler troughs. Inspection of Carrying roller, Impact, Return and Guide rollers and replace the same whenever they are found defective. Lubrication of all bearings, Gearboxes, Chains, Fluid couplings etc. Cleaning of Scrappers and Adjusting/Replacing the same for proper scrapping under belt. Cleaning of head, tail, snub pulleys for proper alignment of the belt. Inspection /adjusting Skirt rubber pads and the same to be replaced as and when required. Cleaning of material spillage on conveyor decks, chutes around pulleys and charging on the belt. Attending to Divertors in Discharge chutes and on conveyors. Upon failure of any Gearbox of conveyor for whatsoever reason, dismantle, overhaul (including spare parts replacement, if required) and alignment. Upon failure of Fluid couplings of conveyor for whatsoever reason, replace the same with spare Fluid coupling and carry out alignment. Upon failure of any Motor of conveyor for whatsoever reason, replace same with spare Motor and carry out alignment. Replacing the damaged bearings of any pulleys, rollers, etc.) whenever required. Replacing head /tail/snub/bend/gravity take-up pulleys whenever required	NOS	6		
	<u>Slat/Belt/Roller maintenance</u>				
10.2	Cleaning of the material dust deposited on Conveyors. Inspection & tightening of all the bolts of the slat including Sprocket, chains, and pedestal bearings. Inspection / adjustment of guide clamps. Lubrication of gear box , links etc. Overhauling of Gearbox, Fluid coupling etc; (Including spare part replacement). Replacing of wornout link, rollers, sprockets, etc. Dismantling/overhauling/fixing of gear boxes as & when required and external cleaning of Gearboxes, Motor ,Clutch box, etc.) Mechanical jointing of belt using belt fasteners as and when required; Shifting of vulcanizing machines as and when required.	NOS	6		



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SUB- SECTION- 1(ii)- MECHANICAL EQUIPMENTS RELATED MAINTENANCE ACTIVITIES

SL NO	ITEM DESCRIPTION	UOM	QNTY	RATE (INR)	AMOUNT (INR)
10.3	Screen maintenance:				
	General Lubrication. Driver belt replacement and checking/correcting alignment. Removing top cover & checking/correcting alignment. Removing top cover & cleaning the screen cloth & boxing up.	NOS	6		
10.4	STITCHING/SEALING BAGGING MACHINES REPLACEMENT/MAINTENANCE:				
	Replacement / Shifting of stitching machine. Replacement of Motor Gearbox, Cleaning of Stitching / Sealing / Bagging machines; Inspection / Replacement of 'V' belts, pulleys as and when required; Adjusting the post of Stitching / Sealing machines; General Lubrication of Bearing, Gearboxes, Clutch, Drive chain etc.); Replacement of damaged drive chain links or entire chain as and when required	NOS	6		
10.5	ROBOTIC PALLETIZER MAINTENANCE:				
	General Lubrication of bearings. Inspection /Replacement of Timing belts. Inspection / Adjustment of Destacker forks; Inspection /Adjustment of Destacker brake; Replacement of Robot fingers as and when required ,carrying out alignment of Robot arm/Table etc.	NOS	6		
PART-B SECTION-1 (ii) -DOWNSTREAM TOTAL MECHANICAL EQUIPMENTS ESTIMATED AMOUNT (INR)=					

Applicable Service tax in %

%

(i) Evaluation shall be done on the basis of net of amount . Service tax shall be applicable as per prevailing Govt. rules at the time of invoicing.

ii) Considering nature of job in this section (Part-B, section 1(ii)), applicable rate of Service Tax is 70% on 14% .i.e. 9.80%



SUB-SECTION-1 (iii): SOR- MANDAYS REQUIREMENTS FOR DOWNSTREAMS- LLDPE/PPU/PTD

SL NO	ITEM DESCRIPTION	UOM	Total Quantity for One year	Mandays Rate (INR)	AMOUNT (X) (INR)	AMOUNT (Y) TOWARDS OVERTIME, (INR) (20 % on Amount X)	TOTAL (X+Y) (INR)
SUPPLY OF MANPOWER : Following categories of manpower may be required for special works like Critical equipments routine/schedule maintenance/during emergency shutdown/breakdown/during unforeseen incidents / requirements in the plant or welding works/piping modification and any other site activities as per EIC's Instruction based on site requirements. It must be noted that the services of these manpower may be required any time during 24 hrs.							
1.1	Highly Skilled- Mechanical Maintenance Supervision Assistance Services	Mandays	930				
1.2	Highly Skilled- Mechanical Assistance Services	Mandays	620				
1.3	Skilled- Mechanical Maintenance Assistance Services	Mandays	3100				
1.4	Semi Skilled-Mechanical Maintenance assistance services	Mandays	6200				
1.5	Unskilled - Mechanical Mianenance Helping Assistance Services including General cleaning/house keeping etc	Mandays	7440				
PART-B SECTION-1 (iii)- TOTAL MANDAYS AMOUNT INCLUDING OVERTIME (INR)=							
Applicable Service tax in %							%

(i) Evaluation shall be done on the basis of net of amount. Service tax shall be applicable as per prevailing Govt. rules at the time of invoicing.

(ii) Considering nature of job in this section (Part-B, Section 1 (iii)), applicable rate of Service Tax is 14%



PART-B (SECTION 2)- CPP, OFFSITES & IOP UNITS INCLUDING PIPELINES, WORKSHOP, RWIW and RAILWAY SIDING

SUB- SECTION-2 (i)- PIPING RELATED MAINTENANCE ACTIVITIES

SL NO	ITEM DESCRIPTION	UOM	QNTY	RATE (INR)	AMOUNT (INR)
1.0	FLANGE OPENING & BOX UP				
1.1	Flange opening of 150 rating Flanges Flanges of #150 rating :Opening or Boxing up of flanges with new gasket; gasket replacement after cleaning of gasket faces < cutting of gasket from sheets wherever required >; inserting or removal of spectacle blind/ tail blind wherever necessary to isolate piping; equipments such as column; furnace etc. ; including supply of tools; tackles and manpower necessary to complete the job up to the satisfaction of Engineer In-Charge. If hot bolting is required it is to be done without any extra cost. The flange sizes of-				
1.1.1	Flange Opening 0.5-1.5" sizes x 150 #	NOS. (PAIRS)	200		
1.1.2	Flange opening 2"-3"x150#	NOS. (PAIRS)	200		
1.1.3	Flange opening 4-8"x150#	NOS. (PAIRS)	200		
1.1.4	Flange opening 10-14"x150#	NOS. (PAIRS)	200		
1.1.5	Flange opening 16-18"x150	NOS. (PAIRS)	100		
1.1.6	Flange opening 20"x150# and above	NOS. (PAIRS)	100		

**SCHEDULE OF RATES (SOR)****PART-B (SECTION 2)- CPP, OFFSITES & IOP UNITS INCLUDING PIPELINES, WORKSHOP, RWIW and RAILWAY SIDING****SUB- SECTION-2 (i)- PIPING RELATED MAINTENANCE ACTIVITIES**

SL NO	ITEM DESCRIPTION	UOM	QNTY	RATE (INR)	AMOUNT (INR)
1.2	Flange opening of 300-600 rating Flanges				
	Flanges of 300#-600#: Opening or Boxing up of flanges with new gasket; gasket replacement after cleaning of gasket faces < cutting of gasket from sheets wherever required >; inserting or removal of spectacle blind/ tail blind wherever necessary to isolate piping; equipments such as column; furnace etc. ; including supply of tools; tackles and manpower necessary to complete the job up to the satisfaction of Engineer In-Charge. If hot bolting is required it is to be done without any extra cost. The flange sizes of-				
	1.2.1 Flange Opening 0.5-1.5" sizes x 300#-600 #	NOS. (PAIRS)	200		
	1.2.2 Flange opening 2'-3"x300#-600 #	NOS. (PAIRS)	200		
	1.2.3 Flange opening 4-8"x300#-600 #	NOS. (PAIRS)	200		
	1.2.4 Flange opening 10-14"x300#-600 #	NOS. (PAIRS)	200		
	1.2.5 Flange opening 16-18"x300#-600 #	NOS. (PAIRS)	100		
1.2.6	Flange opening 20"x 300#-600# and above	NOS. (PAIRS)	75		
1.3	Flange opening of 900-2500 rating				
	Flanges of 900# to 2500#: Opening or Boxing up of flanges with new gasket; gasket replacement after cleaning of gasket faces < cutting of gasket from sheets wherever required > inserting or removal of spectacle blind /tail blind wherever necessary to isolate piping; equipments such as column; furnace etc. ; including supply of tools; tackles and manpower necessary to complete the job up to the satisfaction of Engineer In-Charge. If hot bolting is required it is to be done without any extra cost.				
1.3.1	Flange Opening 0.5-1.5" sizes x 900#-2500 #	NOS. (PAIRS)	100		



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SUB- SECTION-2 (i)- PIPING RELATED MAINTENANCE ACTIVITIES

SL NO	ITEM DESCRIPTION	UOM	QNTY	RATE (INR)	AMOUNT (INR)
1.3.2	Flange opening 2'-3"x900#-2500 #	NOS. (PAIRS)	100		
1.3.3	Flange opening 4'-8"x 900#-2500 #	NOS. (PAIRS)	100		
1.3.4	Flange opening 10'-14"x 900#-2500 #	NOS. (PAIRS)	75		
1.3.5	Flange opening 16'-18"x 900#-2500 #	NOS. (PAIRS)	50		
1.3.6	Flange opening 20"x900#-2500 # and above	NOS. (PAIRS)	20		
2	<u>HOT BOLTING OF FLANGES</u>				
2.1	<u>Hot bolting per inch dia for 150# of flange</u> Hot bolting per inch-dia for 150# of flanges at all height as per instruction of E-I-C	ID	200		
2.2	<u>Hot bolting per inch-dia for 300-600# of flange</u> Hot bolting per inch-dia for 300-600# of flanges at all height as per instruction of E-I-C	ID	200		
2.3	<u>Hot bolting per inch-dia for 900-2500# of flanges</u> Hot bolting per inch-dia for 900-2500# of flanges at all height as per instruction of E-I-C	ID	200		
3.0	<u>PIPELINE STRAINER CLEANING</u>				
3.1	<u>Strainer cleaning for all types & all sizes</u> Strainer cleaning for all types & all sizes (excluding channel/Basin strainer) take-out the strainer from body; clean the strainer/strainer sitting area with steam, water, air; cold repairing if necessary; box up after cleaning in all respect (flange opening & box-up as per flange rate) as per instruction of E-I-C				
3.1.1	Upto 12"	NOS	175		
3.1.2	above 12"	NOS	50		



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SUB- SECTION-2 (i)- PIPING RELATED MAINTENANCE ACTIVITIES

SL NO	ITEM DESCRIPTION	UOM	QNTY	RATE (INR)	AMOUNT (INR)
3.2	Channel strainer cleaning 2x1.5m"				
	Channel Strainer Size 2m *1.5m Cleaning including lifting of strainer from position using chain pully or necessary lifting device; cleaning & refitting the strainer in proper position as per instruction of EIC	NOS	50		
3.3	Basin strainer cleaning 3.5x1.5m"				
	Basin Strainer Size 3.5m * 1.5m Cleaning including lifting of strainer from position using chain pully or necessary lifting device ; cleaning and refitting the strainer in proper position as per instruction of E-I-C	NOS	100		
3.4	Pre & Post filter cleaning dryer				
	Pre & Post filter cleaning < Dryer Section > including dismantling of top cover flange ; filter candle ; cleaning & boxup as per instruction of E-I-C.	NOS	15		
3.5	Lube oil, gas filter cleaning upto 4"				
	Lube oil/gas Filter cleaning/ changing upto 4inch size flange or screw joint excluding flange/screwed joint rate including all arrangements of tool and tacks as may be required ; Cleaning of parts as required ; Offering BCPL for inspection if required ; shifting of all spares from workshop/store; Job isto be done as per instruction of BCPL representative ; all relevant data are to be recorded and handed over to concerned engineer in soft and hard copy	NOS	100		
3.6	Lube oil, gas filter cleaning above 4"				
	Lube oil/gas Filter cleaning/ changing more than 4inch size flange or screw joint excluding flange/screwed joint rate including all arrangements of tool and tacks as may be required ; Cleaning of parts as required ; Offering BCPL for inspection if required ; shifting of all spares from workshop/store; Job is to be done as per instruction of BCPL representative ; all relevant data are to be recorded and handed over to concerned engineer in soft and hard copy	NOS	100		



SCHEDULE OF RATES (SOR)

PART-B (SECTION 2)- CPP, OFFSITES & IOP UNITS INCLUDING PIPELINES, WORKSHOP, RWIW and RAILWAY SIDING

SUB- SECTION-2 (i)- PIPING RELATED MAINTENANCE ACTIVITIES

SL NO	ITEM DESCRIPTION	UOM	QNTY	RATE (INR)	AMOUNT (INR)
4.0	PSV MAINTENANCE				
4.1	Dismantling of PSV/TSV (Upto 3 M Height from Ground Level) :				
	Dismantling of PSV/TSV (Upto 3 M Height from Ground Level) ;;at all elevation and at all locations;blinding the inlet and outlet connections;dropping it to ground level safely;transporting to workshop for necessary maintenance and repair by other agency;transporting from workshop to site after repair;deblinding the inlet/outlet connections;cleaning...				
4.1.1	Size 0.5" - 8"-Upto 3 M Height from Ground Level	Nos	150		
4.1.2	Size: 8" to 14" -Upto 3 M Height from Ground Level	Nos	100		
4.1.3	Sizes above 14" -Upto 3 M Height from Ground Level	Nos	75		
4.2	Dismantling of PSV/TSV (3 M - 10 M Height from Ground Level) :				
	Dismantling of PSV/TSV (3 M - 10 M Height from Ground Level) ;;at all elevation and at all locations;blinding the inlet and outlet connections;dropping it to ground level safely;transporting to workshop for necessary maintenance and repair by other agency;transporting from workshop to site after repair;deblinding the inlet/outlet connections;cleaning...				
4.2.1	Size 0.5" - 8" (3 M - 10 M Height from Ground Level)	NOS	50		
4.2.2	8" - 14" (Upto 3 M - 10 M Height from Ground Level)	NOS	30		
4.2.3	Above 14" (Upto 3 M - 10 M Height from Ground Level)	NOS	20		

**SCHEDULE OF RATES (SOR)****PART-B (SECTION 2)- CPP, OFFSITES & TOP UNITS INCLUDING PIPELINES, WORKSHOP, RWIW and RAILWAY SIDING****SUB- SECTION-2 (i)- PIPING RELATED MAINTENANCE ACTIVITIES**

SL NO	ITEM DESCRIPTION	UOM	QNTY	RATE (INR)	AMOUNT (INR)
4.3	Dismantling of PSV/TSV (Above 10 M Height from Ground Level) :				
	Dismantling of PSV/TSV (Above 10 M Height from Ground Level) ;at all elevation and at all locations;blinding the inlet and outlet connections;dropping it to ground level safely;transporting to workshop for necessary maintenance and repair by other agency;transporting from workshop to site after repair;deblinding the inlet/outlet connections;cleaning...				
4.3.1	Size 0.5" - 8" (Above 10 M Height from Ground Level)	NOS	30		
4.3.2	8" - 14" (Above 10 M Height from Ground Level)	NOS	20		
4.3.3	Above 14" (Above 10 M Height from Ground Level)	NOS	10		
5	ERECTION & DISMANTLING OF SCAFFOLDING				
5.1	Providing and fixing double scaffolding system (cup lock type), up to 06 meter height above ground level, including additional rows of scaffolding in stepped manner as per requirement of site, made with 40 mm dia M.S. Tube, placed 1.5 meter center to center, horizontal and vertical tube joints with cup and lock system with MS Tubes, MS Tube challis, MS Tube Clamps and staircase system in the scaffolding for working platform etc and maintaining it in a serviceable condition for complete execution of work and removing it thereafter. The scaffolding system shall be stiffened with bracings, Runners, connecting with the building/structure etc wherever required, if feasible, for inspection of work at required locations with essential safety features for the workmen etc. complete as per directions and approval of Engineer-In-Charge. (Note- the volume of the scaffolding i.e. Height and plan area at the top shall be measured for payment purpose)	Cubic Meter	2000		
5.2	Same as item at SI No- 5.1, but for height up to 10 meter above ground level	Cubic Meter	2000		
5.3	Same as item at SI No- 5.1, but for height up to 20 meter above ground level	Cubic Meter	2000		



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SUB- SECTION-2 (i)- PIPING RELATED MAINTENANCE ACTIVITIES

SL NO	ITEM DESCRIPTION	UOM	QNTY	RATE (INR)	AMOUNT (INR)
5.4	Same as item at SI No- 5.1, but for height up to 30 meter above ground level	Cubic Meter	2000		
5.5	Same as item at SI No- 5.1, but for height up to 50 meter above ground level	Cubic Meter	2000		
5.6	Same as item at SI No- 5.1, but for height from 10 meter to 20 meter level	Cubic Meter	1000		
5.7	Same as item at SI No- 5.1, but for height from 20 meter to 30 meter level	Cubic Meter	1000		
6	OPENING & BOXING UP OF SCREWED FITTINGS				
	Opening and Boxing up of screwed fittings at all height and location with thread sealant; replacement of ferrul etc.; including tightening against leak if there when taken on line ; complete the job up to the satisfaction of Engineer In-Charge..(Excluding Instrumentation Fittings)				
	Screwed fitting 3-6"	NOS	300		
6.1	Screwed fitting 3-6"	NOS	50		
6.2	Screwed fitting above 6"				
7	FABRICATION, WELDING & ERECTION				
7.1	CS-NIBR pipe Fit-up				
	CS pipe Fit-up of different sizes in all site or in position on ground; overhead; at all elevations; including transportation of pipes; flanges; fittings etc. from owner's storage point to work site, deploying adequate resources & complete the job as per satisfaction of E.I.C.	ID	1500		
7.2	CS-NIBR pipe Welding by SMAW				
	CS Pipe Welding by SMAW of different sizes in all site or in position on ground; overhead; at all elevations; including transportation of pipes; flanges; fittings etc. from owner's storage point to work site, deploying adequate resources & complete the job as per satisfaction of E.I.C.	ID	1500		
7.3	CS-NIBR pipe Welding by TIG Welding				
	CS Pipe Welding by TIG Welding of different sizes in all site or in position on ground; overhead; at all elevations; including transportation of pipes; flanges; fittings etc. from owner's storage point to work site, deploying adequate resources & complete the job as per satisfaction of E.I.C.	ID	500		

**SCHEDULE OF RATES (SOR)****PART-B (SECTION 2)- CPP, OFFSITES & IOP UNITS INCLUDING PIPELINES, WORKSHOP, RWIW and RAILWAY SIDING****SUB- SECTION-2 (i)- PIPING RELATED MAINTENANCE ACTIVITIES**

SL NO	ITEM DESCRIPTION	UOM	QNTY	RATE (INR)	AMOUNT (INR)
7.4	SS-NIBR pipe Fit-up				
	SS pipe Fit-up of different sizes in all site or in position on ground; overhead; at all elevations; including transportation of pipes; flanges; fittings etc. from owner's storage point to work site, deploying adequate resources & complete the job as per satisfaction of E.I.C.	ID	500		
7.5	SS-NIBR pipe Welding by SMAW				
	SS Pipe Welding by SMAW of different sizes in all site or in position on ground; overhead; at all elevations; including transportation of pipes; flanges; fittings etc. from owner's storage point to work site, deploying adequate resources & complete the job as per satisfaction of E.I.C.	ID	500		
7.6	SS-NIBR pipe Welding by TIG Welding				
	SS Pipe Welding by TIG Welding of different sizes in all site or in position on ground; overhead; at all elevations; including transportation of pipes; flanges; fittings etc. from owner's storage point to work site, deploying adequate resources & complete the job as per satisfaction of E.I.C.	ID	500		
7.7	Alloy steel / LTCS / Monel / Dissimilar material Piping Fit up				
	Alloy steel / LTCS / Monel / Dissimilar material Piping Fit up of different sizes in all site or in position on ground; overhead; at all elevations; including transportation of pipes; flanges; fittings etc. from owner's storage point to work site, deploying adequate resources & complete the job as per satisfaction of E.I.C.	ID	250		
7.8	Alloy steel / LTCS / Monel / Dissimilar material Piping TIG Welding				
	Alloy steel / LTCS / Monel / Dissimilar material Piping TIG Welding of different sizes in all site or in position on ground; overhead; at all elevations; including transportation of pipes; flanges; fittings etc. from owner's storage point to work site, deploying adequate resources & complete the job as per satisfaction of E.I.C.	ID	250		
7.9	Brazing of all kind of materials	ID	250		
7.10	Aloy Steel / LTCS / GR-3 / SS 304, 304L, 304H, 308, 308H, 316, 316L/Dissimilar Welding/Welding with any Special Electrode Piping	ID	250		



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SUB- SECTION-2 (i)- PIPING RELATED MAINTENANCE ACTIVITIES

SL NO	ITEM DESCRIPTION	UOM	QNTY	RATE (INR)	AMOUNT (INR)
7.11	Erection of piping(any schedule)	IM	2000		
	Erection of piping(any schedule), job includes transportation of materials from store /fabrication yard, boxing up of flange joints of pipes, valves, etc .				
8	OTHER PIPING RELATED MACHINING ACTIVITIES				
	CS-NIBR pipe Flame Cutting of different sizes				
8.1	CS pipe Flame Cutting of different sizes in all site or in position on ground; overhead; at all elevations; including transportation of pipes; flanges; fittings etc. from owner's storage point to work site, deploying adequate resources & complete the job as per satisfaction of E.I.C.	ID	1000		
	CS-NIBR pipe Beveling of different sizes				
8.2	CS pipe Beveling of different sizes in all site or in position on ground; overhead; at all elevations; including transportation of pipes; flanges; fittings etc. from owner's storage point to work site, deploying adequate resources & complete the job as per satisfaction of E.I.C.	ID	750		
	SS-NIBR pipe Cutting of different sizes				
8.3	SS pipe Cutting of different sizes in all site or in position on ground; overhead; at all elevations; including transportation of pipes; flanges; fittings etc. from owner's storage point to work site, deploying adequate resources & complete the job as per satisfaction of E.I.C.	ID	750		
	SS-NIBR pipe Beveling of different sizes				
8.4	SS pipe Beveling of different sizes in all site or in position on ground; overhead; at all elevations; including transportation of pipes; flanges; fittings etc. from owner's storage point to work site, deploying adequate resources & complete the job as per satisfaction of E.I.C.	ID	750		
	AS pipe Flame Cutting of different sizes				
8.5	AS pipe Flame Cutting of different sizes in all site or in position on ground; overhead; at all elevations; including transportation of pipes; flanges; fittings etc. from owner's storage point to work site, deploying adequate resources & complete the job as per satisfaction of E.I.C.	ID	300		



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SUB- SECTION-2 (i)- PIPING RELATED MAINTENANCE ACTIVITIES

SL NO	ITEM DESCRIPTION	UOM	QNTY	RATE (INR)	AMOUNT (INR)
8.6	AS pipe Beveling of different sizes				
	AS pipe Beveling of different sizes in all site or in position on ground; overhead; at all elevations; including transportation of pipes; flanges; fittings etc. from owner's storage point to work site, deploying adequate resources & complete the job as per satisfaction of E.I.C.	ID	300		
9	PIPING HYDROTESTING/PNEUMATIC TESTING				
9.1	CS/AS/SS Pipe Hydrotesting/ Pneumatic Testing of pipings :				
	CS/AS/SS Pipe Hydrotesting/ Pneumatic Testing of pipings : Carrying out per inch dia per mtr. hydrotesting/ pneumatic testing as specified including all other miscellaneous works like blinding, de-blinding etc.; supply of tools, tackles, pressure gauge, hydro test pump and other resources necessary to complete the job upto the satisfaction of Engineer In-Charge.Hydraulic / Pneumatic testing of pipes: Work involves hydrostatic test ,pneumatic pressure testing as per site requirement. It includes all blinding & deblinding jobs,gasket replacement,leakage arresting as per requirements.Hydro/pneumatic testing to be carried out on line as per instruction of Engineer-in-charge. Work involves hydrostatic test, pneumatic pressure testing as per requirement. It is being clarified here that for pipelines fabricated and erected by the contractor, hydraulic / pneumatic testing of the same will be in the scope of contractor and no separate payment will be made for that. However, if the contractor is asked to test any existing pipeline, he will be paid for the same as per SOR. The blinding / de-blinding work, gasket replacement, valves removal required for the test and normalization thereafter will be in the scope of this job and the contractor would not be paid separately for the same	IM	20000		
10	VALVES MAINTENANCE ACTIVITIES				
10.1	Dropping of valves (Any Type, Any rating, at any elevation & by any means):				
	Securely supporting the valve with lifting device/jacking device; Dismantling of end connections of the valve by cutting/loosening of fasteners; Removal of valve from site to designated place/scrap.				
10.1.1	Valves sizes 8"-16"	NOS	200		
10.1.2	above 16"	NOS	100		



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ANNEXURE-II

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SCHEDULE OF RATES (SOR)

PART-B (SECTION 2)- CPP, OFFSITES & IOP UNITS INCLUDING PIPELINES, WORKSHOP, RWIW and RAILWAY SIDING

SUB- SECTION-2 (i)- PIPING RELATED MAINTENANCE ACTIVITIES

SL NO	ITEM DESCRIPTION	UOM	QNTY	RATE (INR)	AMOUNT (INR)
	Erection of valves (Any Type, Any rating & at any Height) :				
10.2	Removal of dirt/grease/rust/foreign particles from seating surface & fasteners.; Alignment of end connection of valve with the existing pipeline; Boxing up of the flanged valves or erection of welded end valves up to edge preparation & fit up job excluding welding, welding shall be paid separately as per applicable SOR.				
10.2.1	Valves sizes -2"-4"	NOS	150		
10.2.2	Valves sizes -6"-16"	NOS	100		
10.2.3	above 16"	NOS	75		
	Internal repairing (Opening of bonnet) of all type of Valves				
10.3	Opening of bonnet of all type of gate; g lobe; ball; plug; check; needle; butterfly; control valves or any other similar valves of all sizes and all rating; at all elevations and at all locations; inside cleaning ; replacement of damaged gasket with new one or if required; cut from gasket sheet to proper size; if required, repairing of valve sheet etc. and box-up as per satisfaction of E.I.C.				
10.3.1	Valves sizes -2"-4"	NOS	150		
10.3.2	Valves sizes -6"-16"	NOS	100		
10.3.3	above 16"	NOS	50		

**SCHEDULE OF RATES (SOR)****PART-B (SECTION 2)- CPP, OFFSITES & IOP UNITS INCLUDING PIPELINES, WORKSHOP, RWIW and RAILWAY SIDING****SUB- SECTION-2 (i)- PIPING RELATED MAINTENANCE ACTIVITIES**

SL NO	ITEM DESCRIPTION	UOM	QNTY	RATE (INR)	AMOUNT (INR)
10.4	<u>Dismantling/Assembling of Valves # 150 rating</u>				
	Dismantling/erection of all type of gate ; globe; ball; plug;check; needle; butterfly; control valves or any other similar valves of all size of 150#; at all elevations and at all locations; dropping it to ground level safely; transporting to & from workshop/store/open yard for necessary maintenance/repair/storage/erection; box-up with proper gasket; if required cutting from gasket sheet after cleaning studs; gasket faces etc. and complete the job as per satisfaction of E.I.C.				
	10.4.1 Valves sizes -2"-4"	NOS	100		
	10.4.2 Valves sizes -6"-16"	NOS	75		
10.4.3	above 16"	NOS	50		
10.5	<u>Dismantling/Assembling of all type of Valves #300-#600 rating</u>				
	Dismantling/erection of all type of gate ; globe; ball; plug;check; needle; butterfly; control valves or any other similar valves of all size of 300-600# per inch-dia basis; at all elevations and at all locations; dropping it to ground level safely; transporting to & from workshop/store/open yard for necessary maintenance/repair/storage/erection; box-up with proper gasket; if required cutting from gasket sheet after cleaning studs; gasket faces etc. and complete the job as per satisfaction of E.I.C.				
	10.5.1 Valves sizes -2"-4"	NOS	100		
	10.5.2 Valves sizes -6"-16"	NOS	75		
10.5.3	above 16"	NOS	50		



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PART-B (SECTION 2)- CPP, OFFSITES & IOP UNITS INCLUDING PIPELINES, WORKSHOP, RWIW and RAILWAY SIDING

SUB- SECTION-2 (i)- PIPING RELATED MAINTENANCE ACTIVITIES

SL NO	ITEM DESCRIPTION	UOM	QNTY	RATE (INR)	AMOUNT (INR)
10.6	Dismantling/assembly of all type of Valves #900-#2500 rating				
	Dismantling/erection of all type of gate ; globe; ball; plug;check; needle; butterfly; control valves or any other similar valves of all size of 900-2500# per inch-dia basis; at all elevations and at all locations; dropping it to ground level safely; transporting to & from workshop/store/open yard for necessary Maintenance/repair/storage/erection; box-up with proper gasket; if required cutting from gasket sheet after cleaning studs; gasket faces etc. and complete the job as per satisfaction of E.I.C.				
	10.6.1 Valves sizes -6"-16"	NOS	75		
10.6.2	above 16"	NOS	50		
10.7	Gland repacking of all type of Valves				
	Gland repacking of all type of gate; globe; ball; plug; check; needle; butterfly; control valves or any other similar valves of all size & all rating ; at all elevations and at all locations; with proper size & specification of gland packing; extracting the damaged packings with proper tools; cutting the new packings into proper size; if required tighten after the valve taken in to service; as per instruction of E.I.C.				
	10.7.1 Valves sizes -2"-4"	NOS	100		
10.7.2	Valves sizes -6"-16"	NOS	75		
10.7.3	above 16"	NOS	50		

**SCHEDULE OF RATES (SOR)****PART-B (SECTION 2)- CPP, OFFSITES & IOP UNITS INCLUDING PIPELINES, WORKSHOP, RWIW and RAILWAY SIDING****SUB- SECTION-2 (i)- PIPING RELATED MAINTENANCE ACTIVITIES**

SL NO	ITEM DESCRIPTION	UOM	QNTY	RATE (INR)	AMOUNT (INR)
11	CLAMP RELATED ACTIVITIES				
11.1	Clamp fabrication Size upto 6inch <dia. Clamp fabrication Size upto 6inch <dia.or cross sectional diagonal> from pipe; structural as per required shape & size; Transportation of all piping items from BCPL's storage point to work site/work shop; fabrication including cutting/grinding; edge preparation; inclusive of grinding the edges of pipe; fittings; flanges etc. to match with the mating edges of uneven; different thickness wherever required; fit-up; bending; welding; threading etc. at all elevation; fulfilling NDT performance; NDT under BCPL's scope; as required by Inspection deptt. of BCPL; with all arrangement for inspection;completing all such works in all respect; including preparation of drawings; as per specification; & instruction of E-I-C.	NOS	50		
11.2	Clamp fabrication Size above 6inch <dia. Clamp fabrication Size above 6inch <dia.or cross sectional diagonal> from pipe; structural as per required shape & size; Transportation of all piping items from BCPL's storage point to work site/work shop; fabrication including cutting/grinding; edge preparation; inclusive of grinding the edges of pipe; fittings; flanges etc. to match with the mating edges of uneven; different thickness wherever required; fit-up; bending; welding; threading etc. at all elevation; fulfilling NDT performance; NDT under BCPL's scope; as required by Inspection deptt. of BCPL; with all arrangement for inspection;completing all such works in all respect; including preparation of drawings; as per specification; & instruction of E-I-C.	NOS	30		
11.3	Opening or Boxing up size: up to 6inch of Clamps at all height and location including underground with sealant Opening or Boxing up size: up to 6inch of Clamps at all height and location including underground with sealant<magic wrap etc.> in online or offline piping; Cleaning the area where clamping to be done; cutting gasket from sheet; flexible hose wherever required; removing and inserting plugs wherever necessary to arrest leakage; removing water in underground leak by manual or pump; tightening against leak; complete the job up to the satisfaction of Engineer In-Charge.	NOS	30		



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PART-B (SECTION 2)- CPP, OFFSITES & IOP UNITS INCLUDING PIPELINES, WORKSHOP, RWIW and RAILWAY SIDING

SUB- SECTION-2 (I)- PIPING RELATED MAINTENANCE ACTIVITIES

SL NO	ITEM DESCRIPTION	UOM	QNTY	RATE (INR)	AMOUNT (INR)
	<u>Opening or Boxing up Size: above 6inch <dia. or cross sectional diagonal>of Clamps at all height and location including underground with sealant</u>				
11.4	Opening or Boxing up Size: above 6inch <dia. or cross sectional diagonal>of Clamps at all height and location including underground with sealant<magic wrap etc.>; Cleaning the area where clamping to be done; cutting gasket from sheet; flexible hose wherever required; removing and inserting plugs wherever necessary to arrest leakage; removing water in underground leak by manual or pump; tightening against leak; complete the job up to the satisfaction of Engineer In-Charge.	NOS	30		
12	STRUCTURAL STEEL ACTIVITIES				
	<u>Fabrication & erection of steel structural</u>				
12.1	Fabrication & erection of steel structural including transportation of material from owner's storage point to fabrication site/ work shop for pipe racks; staircases; hand rails; gratings; ladders; platforms brackets etc. of all types; preparation of necessary drawings; including supply of all tools & tackles; equipments; machinery; consumables labour etc. necessary to complete the job in all respect as per drawing; codes& specification; including supply & application of one coat of red oxide primer; as per instruction of engineer incharge.< structural steel material; including nut bolt; washers; etc. will be supplied by BCPL	MT	10		
	<u>Dismantling of existing structural work</u>				
12.2	Dismantling of existing structural work by cutting; grinding; gauging; including cleaning the area; grinding & making smooth the uneven cut surfaces and returning the cut out materials to BCPL store including supply of all tools & tackles; equipments; machinery; consumables labour etc. necessary to complete the job in all respect as per drawing; codes; specification & instructions of Engineer In-Charge;	MT	10		
	<u>Structural Fabrication and Erection (e.g. platform, stair case, hand railing, grating etc.) including primer coating.</u>				
12.3	Issuance of all structural items from BCPL designated stores / other storage areas to the site as per instructions of ENGINEER-IN-CHARGE; Supply of all kind of machinery, tools, tackles and consumable items required to complete the fabrication job are in the scope of the contractor; Gas Cutting, grinding etc.; Welding as per standard.; Erection at site including handling.; Primer Coat with Red Oxide Primer; Erection and return of excess/unused material (as per standard Engineering practice) to BCPL designated stores / other storage areas as per instructions of ENGINEER-IN-CHARGE.	MT	10		



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SUB- SECTION-2 (i)- PIPING RELATED MAINTENANCE ACTIVITIES

SL NO	ITEM DESCRIPTION	UOM	QNTY	RATE (INR)	AMOUNT (INR)
13	SWIVEL JOINTS DISMANTLING & REPAIRING				
13	Dismantling or erection of swivel joints by opening or box up of flanges; transportation of swivel joint to and from owner's storage point or maint. Yard completing the job in all respects with supply of all tools; tackles; trolley for transportation of swivel joints as per the instruction of E-I-C.				
13.1.1	Swivel joint dismantling 3-4"	NOS	20		
13.1.2	Swivel joint dismantling 6-8"	NOS	20		
13.2	Repairing of swivel joints by dismantling the bearing balls; lip seal; O' rings; providing tags for identification; cleaning of all parts; reassemble changing parts if reqd. to complete as per the instruction of E-I-C				
13.2.1	Swivel joint repairing 3-4"	NOS	10		
13.2.2	Swivel joint repairing 6-8"	NOS	10		
14	PLATE CUTTING & WELDING				
14.1	Plate cutting per mm thickness per running mtr.:To & fro Transportation of plates of all sizes from owners storage point to working site, Gas cutting of plates, finishing edge preparation by grinding, deploying adequate resources and complete the job as per satisfaction of E.I.C., UOM: MM thk per RM				
14.1.1	CS Plate cutting per mm thickness per running mtr	RM	250		
14.1.2	SS/AS Plate cutting per mm thickness per running mtr	RM	100		
14.2	Plate welding per mm thickness per running mtr.:To & fro Transportation of plates of all sizes from owners storage point to working site, Edge preparation by grinding, Fit-up & welding with proper electrode, ensuring interstage & final job quality through BCPL., deploying adequate resources and complete the job as per satisfaction of E.I.C.,UOM: MM thk per RM				
14.2.1	CS Plate welding per mm thickness per running mtr	RM	200		
14.2.2	AS/SS Plate welding per mm thickness per running mtr.	RM	100		
14.3	Repair / Tack / Stitch / Plate welding(applicable for old/existing structures/pipings, etc	RM	50		
15	MISCELLANEOUS ACTIVITIES				
	COPPER TUBING WORKS				
15.1	Copper Tubing work: Transportation of all Cu-tubing & fitting items from BCPL's storage point to work site; including cutting/bending to required length; fixing of valve; fittings etc.; connecting to nearest supply point of steam;air etc.;laying over piping as steam tracing providing as sample collector and complete the job as per satisfaction of E.I.C.	RM	200		



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SUB- SECTION-2 (i)- PIPING RELATED MAINTENANCE ACTIVITIES

SL NO	ITEM DESCRIPTION	UOM	QNTY	RATE (INR)	AMOUNT (INR)
	PIPELINE CLEANING				
15.2	Decchoking of pipe lines of all sizes and ratings at all height and locations including opening of required flanges; if necessary, dropping of pipe line; valve etc.; fixing of steam/air/water hose; dechoking and cleaning with steam/air/water; box up the lines <rate of opening & box up of flanges are as per flange rate> after dechoking as per instruction of E.I-C.				
15.2.1	Upto 6"	IM	2000		
15.2.2	6"-16"	IM	2000		
15.2.3	Above 16"	IM	2000		
	All size expansion bellow opening; fabric part dismantling in RM;				
15.3	All size expansion bellow opening; fabric part dismantling in RM; replacement; refitting ; gasket cutting from sheet; stud; bolt cleaning, complete all job related to expansion joint to the satisfaction of E.I.C.	RM	10		
15.4	DAMPER REPAIRING				
	Damper repairing upto 500mm	NOS	10		
15.4.1	Damper repairing/maintenance up to 500mm diagonal/diameter..				
	Damper repairing above 500 mm	NOS	10		
15.4.2	Dampner repairing more than 500 mm diagonal/diameter.				
	Damper rope and pulley opening	NOS	10		
15.4.3	Damper rope and pully opening; repairing; fixing & re-positing/maintenance				

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SUB- SECTION-2 (i)- PIPING RELATED MAINTENANCE ACTIVITIES

SL NO	ITEM DESCRIPTION	UOM	QNTY	RATE (INR)	AMOUNT (INR)
15.5	<u>Application of cold weld/magic wrap to a rrest leakage</u> Application of cold weld/magic wrap to a rrest leakage from any welding joint or parent metal at any height and loaction including underground piping; supply of magic wrap inBCPL's scope; as per instruction of E-I-C	NOS	50		
15.6	<u>PIPE SUPPORT: Fabrication & erection of dummy pipe supports</u> PIPE SUPPORT: Fabrication & erection of dummy pipe supports like shoes; cradles; turn buckles; T-posts etc. of all types including supply & application one coat of red oxide; zinc chromate primer; all necessary equipments; consumables; labour returning surplus materials & scrap etc. to Owners storage points & completing work as per drawing; specifications & instructions of Engineer-in-charge. <The structural steel for pipe support will be supplied by the Owner from storage point free of cost : CS Material.	MT	2		
15.7	<u>Sparay nozzle cleaning</u> Spray Nozzle: opening; cleaning with steam/air/water to the satisfaction of E-I-C and box up with thread sealant after cleaning; if required replenishment; in any location and complete the job as per instruction of E-I-C	NOS	150		
15.8	<u>Steam trap repairing</u> Rectification of faulty steam trap of all sizes & ratings at all locations including opening & cleaning of steam traps along with their internals; lapping of disc seat; assemble; testing and box up as per instruction E-I-C	NOS	100		
15.9	<u>Transportation of materials</u> Transportation of different mechanical /electrical items /equipments e.g. electrical motors control valve rotameters; level trols Industrial Valves; etc. using cart; trolley; trailer; crane etc. as per job requirement from one location to another including NRM/MT and Refinery as per instruction of the Engineers In-charge.	MT	100		



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PART-B (SECTION 2)- CPP, OFFSITES & IOP UNITS INCLUDING PIPELINES, WORKSHOP, RWIW and RAILWAY SIDING

SUB- SECTION-2 (i)- PIPING RELATED MAINTENANCE ACTIVITIES

SL NO	ITEM DESCRIPTION	UOM	QNTY	RATE (INR)	AMOUNT (INR)
15.10	Opening and box up of pontoon manway covers				
	Opening and box up of pontoon manway covers by using the U-type lifting lugs; checking of neoprene gasket; changing it if reqd.; putting the cover lock in proper position to complete the job in all respect as per the instruction of E-I-C.	NOS	20		
15.11	WRAPPING COATING				
	Wrapping and coating in underground piping including application of primer; as specified by BCPL Inspection deptt.; Supply of Wrapping coating and supply of material and all tools & tackles including heating torch in the contractors scope; as per instruction of E-I-C	SQM	200		
15.12	Immediate Hot job group mobilisation				
	Immediate Hot job group mobilisation with all resources like Diesel generator/ Motor generator/Rectifier as per requirement, Gas cutting sets with cylinders, Grinding machines, extention boards, power distribution board with ELCB etc.as required for carrying out Hot jobs.	OCC	5		
15.13	Repairing , modification & alignment of HDPE/Poly Propylene piping	ID	300		
15.14	TIGHTENING OF ANY JOINTS (FLANGES/BLINDS/MANHOLE COVERS)/THREADED JOINTS/PEEPHOLE COVER ETC. AS PER FLANGE/ PIPE SIZE/ MANHOLE SIZE FOR ANY PURPOSE WITH PARTIAL REPLACEMENT OF FASTENERS ETC, IF REQUIRED.	NOS	10		
PART-B SECTION -2(i) -PIPING ACTIVITIES TOTAL AMOUNT (INR)=					

Applicable Service tax in %

(i) Evaluation shall be done on the basis of net of amount . Service tax shall be applicable as per prevailing Govt. rules at the time of invoicing.

(ii) Considering nature of job in this section (Part-B, Section 2 (ii)), applicable rate of Service Tax is 70% on 14% i.e. 9.80%



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PART-B (SECTION 2):: CPP, Offsites & IOP units including Pipelines, Central Workshop, RWIW and Railway Siding terminals

SUB- SECTION:: 2 (ii)- EQUIPMENT RELATED MAINTENANCE ACTIVITIES

SL NO	ITEM DESCRIPTION	UOM	QNTY	RATE (INR)	AMOUNT (INR)
1	RECIPROCATING/PISTON/ PLUNGER / DIAPHRAGM / DOSING PUMPS MAINTENANCE like:				
1.1	Gland Packing tightening of all RECIPROCATING/PISTON/ PLUNGER / DIAPHRAGM / DOSING PUMPS e: Removal of guards, if required; Removal of dirt/grease/rust/foreign particles as per requirement; Tightening of gland including replacement of fasteners, if required.	NOS	40		
1.2	Gland Packing replacement of all RECIPROCATING/PISTON/ PLUNGER / DIAPHRAGM / DOSING PUMPS : Removal of guards, if required; Dismantling of fluid end, as per requirement; Cutting of gland packing to size, if required; Removal of dirt/grease/rust/foreign particles; Inspection/Replacement of Lantern rings/ Bushes/Other internals; Gland Packing replacement; Any sort of repair/replacement, as per requirement; Assembly.	NOS	40		
1.3	Oil seal(s) replacement of all RECIPROCATING/PISTON/ PLUNGER / DIAPHRAGM / DOSING PUMPS : Removal of guards, if required; Dismantling of power end; Removal of dirt/grease/rust/foreign particles; Inspection/Replacement of internals; Oil seal(s) replacement; Any sort of repair/replacement, as per requirement; Assembly; Alignment; LO flushing & lubricating bearings/ bushings etc.	NOS	40		
1.4	Removal and fixing of coupling hub of all type of RECIPROCATING/PISTON/ PLUNGER / DIAPHRAGM / DOSING PUMPS : Removal of coupling guard; Removal of coupling spacer; Removal of coupling hub(s); Removal of dirt/grease/rust/foreign particles etc; Any sort of repair/replacement, as per requirement; Assembly of coupling hub(s); Alignment; Assembly of coupling spacer & coupling Guard	NOS	40		
1.5	Suction and Discharge NRV Inspection / replacement of all RECIPROCATING/PISTON/ PLUNGER / DIAPHRAGM / DOSING PUMPS: Dismantling of all suction and discharge NRVs / Check valves; Inspection/overhauling/replacement of valves as required; Inspection of other fluid end parts as required; Removal of dirt/grease/rust/foreign particles etc; Any sort of repair/replacement, as per requirement; Assembly	NOS	40		



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PART-B (SECTION 2):: CPP, Offsites & IOP units including Pipelines, Central Workshop, RWIW and Railway Siding terminals

SUB- SECTION:: 2 (ii)- EQUIPMENT RELATED MAINTENANCE ACTIVITIES

SL NO	ITEM DESCRIPTION	UOM	QNTY	RATE (INR)	AMOUNT (INR)
1.6	Complete overhauling of all RECIPROCATING/PISTON/ PLUNGER / DIAPHRAGM / DOSING PUMPS :				
	Complete dismantling of pump; Shifting of pump to the workshop for repair and back to the position; Cleaning & checking/replacement of suction & discharge valves, piston, plungers, gland packing, diaphragms, oil seal, bush, gland & coupling etc.; Maintenance of stroke adjustment assembly; Maintenance of lubricator assembly; Maintenance /Inspection of all other accessories of pump; Setting of PRVs, checking of damper pressure & charging of N ₂ ; Charging of Oil in Oil chambers; Connection of suction & discharge lines with proper gasket and fasteners to pump nozzles; Alignment of pump & motor or pump & gear box and gear box and motor in case of pumps having gear box; Opening of both suction and discharge filter, cleaning & box up.; Flushing & charging of OIL & grease nipples/housings etc(not applicable for equipments having separate oil reservoirs), Job is to be done as per instruction of BCPL representative ; all relevant data are to be recorded and handed over to concerned engineer in soft and hard copy	NOS	40		
1.7	Preventive Miant for reciprocating/plunger/diaphragm/dosing pumps:				
	Preventive Miant for reciprocating/plunger/diaphragm/dosing pumps: Carrying out decoupling & coupling including guard open & box-up, Cold alignment, Strainer cleaning including opening & box-up of flanges, All accessories opening, cleaning & box-up, Lube oil/Grease checking & filling etc. complete and record the job as per preventive maintenance check list	NOS	20		
1.8	Shear pin adjustment and replacement of piston and plunger Pump				
	Equipment lockout as per procedure of Manual; Determine the cause of Pin failure, perform any necessary repair if possible; punch out the broken shear pin with a drift Pin; Align the equipment so that the new shear pin can be adjusted; and remove the equipment from lock out.	NOS	20		
1.9	Packing adjustment and replacement of Piston & Plunger type Pumps				
	Check the pump and adjust packing; tighten the packing gland bolts tightly; if it is overtightened then loose slightly; check the packing gland for chocking or misalignment if so then do the needful	NOS	20		
1.10	Stroke adjustment knob repair of Diaphragm Pumps				
	Dismantling of adjustment knob(s); Removal of dirt/grease/rust/foreign particles etc; Minor repair/replacement, as per requirement; Assembly.	NOS	20		
1.11	Diaphragm replacement of Diaphragm Pumps				
	Dismantling of all diaphragms as required; Inspection of diaphragms/Internals as required; Removal of dirt/grease/rust/foreign particles etc; Any sort of repair/replacement, as per requirement; Assembly	NOS	20		



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PART-B (SECTION 2):: CPP, Offsites & IOP units including Pipelines, Central Workshop, RWIW and Railway Siding terminals

SUB- SECTION:: 2 (ii)- EQUIPMENT RELATED MAINTENANCE ACTIVITIES

SL NO	ITEM DESCRIPTION	UOM	QNTY	RATE (INR)	AMOUNT (INR)
2	MAINTENANCE OF DUPLEX/TRIPLEX PUMPS MAINTENANCE				
	Change Packingset/Plunger/Bush/seal each plunger of duplex/triplex pump				
2.1	Change Packing set /Plunger/ Bush /seals each plunger of pump; Cleaning/Replacement of suction & discharge NRVs of individual pump; Replacement of diaphragm of each individual pump; Cleaning of plunger /diaphragm head assembly & replacement /cleaning of diaphragm, suction & discharge NRVs if required, Job is to be done as per instruction of BCPL representative ; all relevant data are to be recorded and handed over to concerned engineer in soft and hard copy	NOS	15		
2.2	CHANGE OF GLAND PACKINGS SET /PLUNGER/BUSH/SEAL OF EACH PLUNGER DUPLEX/TRIPLEX PUMP				
	Replacement of plunger packing"s sets etc. in each pump of duplex / triplex pump.	NOS	15		
2.3	CLEANING /REPLACEMENT OF SUCTION & DISCHARGE NRVs OF INDIVIDUAL PUMP OF DUPLEX & TRIPLEX PUMP				
	Dismantling of suction & discharge NRVs and associates piping"s.; Cleaning of NRVs /replacement of NRVs, if required.; Adjustment/cleaning of PRVs for setting pressure of each individual pump of duplex / triplex metering pumps; Replacement of diaphragm of each individual pump; Cleaning of plunger /diaphragm head assembly & replacement /cleaning of diaphragm, suction & discharge NRVs if required.; Box up of all dismantled items Job is to be done as per instruction of BCPL representative ; all relevant data are to be recorded and handed over to concerned engineer in soft and hard copy	NOS	15		
2.4	GLAND LEAKAGE RECTIFICATION BY TIGHTENING/REPLACEMENT AS PER REQUIREMENT				
	Removal of gland and old packing material; Cutting of new packing material to size; Assembly of gland with new packing material	NOS	25		



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SUB- SECTION:: 2 (ii)- EQUIPMENT RELATED MAINTENANCE ACTIVITIES

SL NO	ITEM DESCRIPTION	UOM	QNTY	RATE (INR)	AMOUNT (INR)
3	MAINTENANCE OF SINGLE STAGE/ MULTISTAGE HORIZONTAL/VERTICAL CENTRIFUGAL/SCREW/GEAR PUMPS/BLOWERS/AGITATORS				
3.1	Preventive Maint.for centrifugal / Rotary pump: Preventive Maint.for centrifugal / Rotary pump: Carrying out decoupling & coupling including guard open & box-up, Cold & Hot alignment, Strainer cleaning including opening & box-up of flanges, All accessories opening, cleaning & box-up, Lube oil/ Grease checking & filling etc. complete and record the job as per the Preventive Maint. check list.	NOS	50		
3.2	Removal & re-assembly of both coupling hubs (per coupling) Removal of coupling guard; Removal of coupling Spacer/belt/chain, Inspection of the coupling; Removal of dirt/Grease/Rust/Foreign particles etc; Any sort of repair/replacement as per requirement; Alignment; Assembly of Coupling & Coupling guard, Job is to be done as per instruction of BCPL representative ; all relevant data are to be recorded and handed over to concerned engineer in soft and hard copy	NOS	30		
3.3	Alignment of Pumps/gear boxes with drive machine: Removal of coupling guard.; Removal of pump with the coupling using suitable method including both cold and hot alignment of all pumps as per requirement. Includes all arrangements of tool and tackle as may be required; Cleaning of parts as required; Removal of dirt/grease/rust/foreign particles etc.; Any sort of repair/replacement, as per requirement.; Assembly of coupling & coupling guard ;Offering BCPL for inspection if required ; shifting of all spares from workshop/store.; Job is to be done as per instruction of BCPL representative, all relevant measurement and data are to be recorded and handed over to concerned engineer in soft and hard copy.				
3.3.1	Up to 10 KW	NOS	15		



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SL NO	ITEM DESCRIPTION	UOM	QNTY	RATE (INR)	AMOUNT (INR)
3.3.2	10 KW to 30 KW	NOS	15		
3.3.3	Above 30 KW	NOS	15		
3.4	Mechanical seal cooler cleaning (per pump): The work involves the blinding / de-blinding the cooler nozzle flanges; cleaning of shell & tube bundle of the cooler by tube bundle removal; Cleaning & box up hydro test (if required.) as per instruction of EIC.; dismantling, removal and cleaning of seal pot and associated lines and Boxing up the same after thorough cleaning.	NOS	30		
3.5	Mechanical seal replacement job: Removal of coupling guard; Removal of coupling Spacer/belt/chain; Recording the alignment readings(with out adjustments); Dismantling of equipment & connected pipings for the purpose of Mechanical Seal inspection/replacement; Dismantling of Seal Flushing line cooler, Cleaning of lines, NRVs, Strainers, valves & Coolers.It also includes re-fixing of lines after proper cleaning; Mechanical seal inspection/replacement; Removal of dirt/Grease/Rust/Foreign particles etc; Any sort of repair/replacement as per requirement; Assembly of Pump; Flushing/charging of Oil/Seal Flushing Fluid, Cleaning Oilers; Alignment; Assembly of Coupling & Coupling guard, Job is to be done as per instruction of BCPL representative ; all relevant data are to be recorded and handed over to concerned engineer in soft and hard copy	NOS	40		
3.6	Decoupling & Coupling of spacer type flexible coupling Decoupling & Coupling of spacer type flexible coupling excluding spider type for all pumps, gear box, clutch, turbine, motor etc. including removal and box up and proper alignment of coupling guard, all arrangements of tool and tacks as may be required;Cleaning of parts, all spares transportation from workshop/store etc. complete the work as per the satisfaction of E.I.C.	NOS	40		



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SL NO	ITEM DESCRIPTION	UOM	QNTY	RATE (INR)	AMOUNT (INR)
3.7	Decoupling & Coupling of the spider type coupling				
	Decoupling & Coupling of the spider type coupling for all pumps, gear box, clutch, turbine, motor etc. including removal and box up & of coupling guard, all arrangements of tool and tackles as may be required; Cleaning of parts, all spares transportation from workshop/store etc. complete the work as per the satisfaction of E.I.C.	NOS	40		
3.8	Alignment spider type coupling				
	Alignment of pump with lovejoy type coupling using suitable method including both cold and hot alignment all pumps. includes all arrangements of tool and tackles as may be required; Cleaning of parts as required ;Offering BCPL for inspection if required ; shifting of all spares from workshop/store; to &fro transportation from workshop/store. Job is to be done as per instruction of BCPL representative ;all relevant measurement and data are to be recorded and handed over to concerned engineer in soft and hard copy	NOS	40		
3.9	Gland tightening of all pumps per stuffing box:				
	Gland tightening of all pumps per stuffing box for shaft/plunger dia of all size includes all arrangements of tool and tackles as may be required; Cleaning of parts/flushing of auxiliary lines as required ;Offering BCPL for inspection if required ; shifting of all spares from workshop/store complete the job as per satisfaction of E.I.C.	NOS	40		
3.10	Gland repacking of all pumps per stuffing:				
	Gland repacking of all pumps per stuffing box for shaft/plunger of all sizes includes all arrangements of tools & tackles as required; Cleaning of parts/flushing of auxiliary lines as required ;Offering BCPL for inspection if required ; shifting of all spares from workshop/store complete the job as per satisfaction of E.I.C.	NOS	30		
3.11	Motor dismantling & erection all pumps.				
	Motor dismantling & erection all pumps.includes all arrangements of tool and tackles as may be required;Cleaning of parts/flushing of auxiliary lines as required ;Offering BCPL for inspection if required ; shifting of all spares from workshop/store; to &fro transportation from workshop/store; . Job is to be done as per instruction of BCPL representative ;all relevant measurement and data are to be recorded and handed over to concerned engineer in soft and hard copy	MT	500		



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SL NO	ITEM DESCRIPTION	UOM	QNTY	RATE (INR)	AMOUNT (INR)
3.12	Bearing Replacement				
	Removal of Coupling Guard; Removal of Coupling Spacer/belt/chain; Recording the alignment readings(with out adjustments); Dismantling of equipment, Bearing housing & connected piping for the purpose of Bearing inspection/replacement; Removal of Seal flushing system; Bearing Inspection/replacement; Removal of dirt/Grease/Rust/Foreign particles etc; Any sort of repair/replacement as per requirement.; Assembly of equipment/bearing housing; Flushing & charging of Oil (not applicable for pump having separate oil reservoir) /Seal flushing fluid /cleaning oilers/priming of MOP etc.; Alignment before & after maintenance; assembly, Job is to be done as per instruction of BCPL representative ; all relevant data are to be recorded and handed over to concerned engineer in soft and hard copy				
	Up to 10 KW	NOS	35		
	10 KW to 30 KW	NOS	20		
	Above 30 KW	NOS	20		
3.13	Complete Overhauling				
	Removal of Coupling Guard;Removal of Coupling Spacer/belt/chain; Recording the alignment readings(with out adjustments); Dismantling of equipment & connected piping for the purpose of complete overhaul; Complete dismantling of pump; Shifting of pump to the workshop for repair and back to the position; Maintenance/inspection of all other accessories of pump; Flushing & charging of oil (not applicable for pump having separate oil reservoir)/ seal flushing fluid, cleaning oilers, priming of MOP etc. ; Connection of suction/discharge lines with proper gasket, fastener to pump nozzles; Alignment of pump & motor or pump & gear box and gear box and motor in case of pumps having gear box				
3.13.1	Up to 10 KW	NOS	20		



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SL NO	ITEM DESCRIPTION	UOM	QNTY	RATE (INR)	AMOUNT (INR)
3.13.2	10 KW to 30 KW	NOS	10		
3.13.3	Above 30 KW	NOS	10		
3.14	Maintenance of Screw Pumps				
	Lubrication of timing gears of Screw Pumps				
3.14.1	Check, refill and if required replace the lube oil in the gear housing & the rear cover of the Screw Pumps to the correct level with the oil specified by the manufacturer	L	1000		
3.14.2	Replacement of Screw Pump Packing as per requirement	Ea	10		
	Timing Gear Replacement				
3.14.3	Take the old timing gear off the shaft and push the replacement gears half way on; put the key in the slotted gear; adjust the free, unslotted timing gear until the desired screw clearance is obtained; replace the rotating element and reassemble the pump with the new timing gear	NOS	10		
	Complete Disassembly of Screw Pumps				
3.14.4	Dismantling of the Screw Pump- Close the suction and discharge valves, Disconnect the coupling and suction and discharge flange; Timing gear disassembly, rotor removal, removal of bearing, maintenance procedure as per pumps manual	NOS	10		
	Re-assemble of Screw Pumps				
3.14.5	Install/replace the bearings; check the rotation; removal of dirt, grease, other particles; adjust the clearance of the screws; install the timing gears as per manual, reassemble of the pump	NOS	10		



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SL NO	ITEM DESCRIPTION	UOM	QNTY	RATE (INR)	AMOUNT (INR)
4	MAINTENANCE OF FANS/BLOWERS				
4.1	COMPLETE O/ H OF BLOWER/FAN All activities required for complete over hauling of equipment e.g. belt/coupling removal, dismantling of bearings/fan casing/ internals etc, as per instruction of EIC, including repair/replacement & modification as per requirement; Alignment before and after maintenance; Opening of both suction and discharge filter, cleaning and box up; Flushing / charging of oil & grease, cleaning oilers/grease nipples/housings etc.(not applicable for Equipment having separate oil reservoir)				
4.1.1	upto 50 KW	NOS	10		
4.1.2	ABOVE 50 KW	NOS	10		
4.2	CLEANING OF SUCTION & DISCHARGE SILENCERS Removal of suction & discharge filter; Clean /replace suction /discharge filter. Box up.	NOS	20		
4.3	Fin fan Preventive checks Preventive Checks <Belt tension cheking;Alignment checking structure bolt checking ;greasing> of air fin cooler fan including all arrangements of tool and tackles as may be required;Cleaning of parts as required ;Offering BCPL for inspection if required ; shifting of all spares from workshop/store; Job is to be done as per instruction ofBCPL representative ;all relevant measurement and data are to be recorded and handed over to concerned engineer in soft and hard copy	NOS	10		
5	MAINTENANCE OF RECIPROCATING / DIAPHRAGM COMPRESSORS:				
5.1	Dismantling of Head Cover For replacement of Diaphragms and "Ö" Rings: Dismantling of suction/discharge valves and associates piping.; Cleaning /inspection of valves and piping"s.; Replacement of valve, if required.; Dismantling of top covers, inspection of diaphragm and O rings for any damage.; Replacement of diaphragms, O rings, if required.; Boxing up & connection of all associate piping.; Adjustment of PRVs.; Checking/charging of lube oil.; Removal & refixing of belts from pulley, if required, Job is to be done as per instruction of BCPL representative ; all relevant data are to be recorded and handed over to concerned engineer in soft and hard copy				



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SL NO	ITEM DESCRIPTION	UOM	QNTY	RATE (INR)	AMOUNT (INR)
5.1.1	Upto 100 KW	NOS	8		
5.1.2	ABOVE 100 KW	NOS	8		
5.2	REPLACEMENT OF GEAR /PISTON LUBE OIL PUMP				
	Opening of side cover of compressor, draining of oil, dismantling of pump.; Replacement of the pump.; Replacement of oil.; Cleaning of filters and box up.; Adjustment of PRVs, if required, Job is to be done as per instruction of BCPL representative ; all relevant data are to be recorded and handed over to concerned engineer in soft and hard copy	NOS	15		
5.3	Compressor all stage cylinder Suction valve:				
	Compressor all stage cylinder Suction valve (including un loader removal & box-up)/ cylinder Discharge valve/Discharge line NRV removal, overhauling & box-up including all arrangement of resources, cleaning of parts, to & fro transportation of all spares/ parts from store/workshop, job is to be done as per instruction of E.I.C., all measurements and data are to be recorded and handed over to concerned engineer in soft & hard copy.	NOS	20		
5.4	Repair of unloading device of compressor:				
	Repair of unloading device of compressor suction valves & clearance pocket including removal & box-up, all arrangements of resources, to & fro transportation of all spares/ parts from store/workshop, job is to be done as per instruction of E.I.C., all measurements and data are to be recorded and handed over to concerned engineer in soft & hard copy.	NOS	15		
5.5	Piston Rod Maintenance:				
	Piston rod main packing/ intermediate packing/ oil scrapper ring removal & assembly after repair for all compressor including opening & box-up of side covers & all arrangement of resources, cleaning of parts, to & fro transportation of all spares/ parts from store/workshop, job is to be done as per instruction of E.I.C., all measurements and data are to be recorded and handed over to concerned engineer in soft & hard	NOS	10		



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SL NO	ITEM DESCRIPTION	UOM	QNTY	RATE (INR)	AMOUNT (INR)
5.6	Maintenance of Screw Compressors				
	Coupling re-installation and alignment of Screw Compressor				
5.6.1	Removal of coupling; Dis mantling of bearing; Removal of dirt/Grease/Rust/Foreign particles etc; Any sort of repair/replacement as per requirement.; Assembly of equipment/bearing housing; Flushing & charging of Oil (not applicable for pump having separate oil reservoir) /Seal flushing fluid /cleaning oilers/priming of MOP etc.; Alignment before & after maintenance; assembly, Job is to be done as per instruction of BCPL representative ; all relevant data are to be recorded and handed over to concerned engineer in soft and hard copy	NOS	10		
	Inspection and replacement of Bearings of Screw Compressor				
5.6.2	Dismantling of equipment, Bearing housing & connected piping for the purpose of Bearing inspection/replacement; Removal of Seal flushing system; Bearing inspection/replacement; Removal of dirt/Grease/Rust/Foreign particles etc; Any sort of repair/replacement as per requirement.; Assembly of equipment/bearing housing; Flushing & charging of Oil (not applicable for pump having separate oil reservoir) /Seal flushing fluid /cleaning oilers/priming of MOP etc.; Alignment before & after maintenance; assembly, Job is to be done as per instruction of BCPL representative ; all relevant data are to be recorded and handed over to concerned engineer in soft and hard copy	NOS	10		
6	EQUIPMENT LUBRICATION & LUBRICANTS HANDLING				
	Lube oil change/charging				
6.1	Lube oil Changing/charging of all equipments; existing oil draining; including complete draining, flushing if required and fresh charging of oil complete the job as per instruction of EIC.	L	5500		
	Constant level Oilier/sight glass/level indicator changing				
6.2	Constant level Oilier/sight glass/level indicator changing all pumps. includes all arrangements of tool and tackels as may be required;Offering BCPL for inspection if required ; shifting of all spares from workshop/store; Job is to be done as per instruction of BCPL representatives	NOS	100		



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SL NO	ITEM DESCRIPTION	UOM	QNTY	RATE (INR)	AMOUNT (INR)
6.3	Bearing lubrication checking, refilling or leakage attending/Oil Rate Adjustment in the bearings				
	Check the bearing Lubrication, Check the Oil Level in the bearings, refilling as per requirement or any leakages observed to be attended	NOS	40		
6.4	OIL TOP UP IN CONSTANT OIL LEVELER OF EQUIPMENTS AS PER SCHEDULE/REQUIREMENT				
	OIL TOP UP IN CONSTANT OIL LEVELER OF EQUIPMENTS AS PER SCHEDULE/REQUIREMENT as per requirement	NOS	25		
6.5	CHARGING/ DRAINING OIL TO/ FROM OIL RESERVOIR AS PER REQUIREMENT WHICH INCLUDES THE FOLLOWING ACTIVITIES:				
	Transportation / handling from BCPL's designated stores/other storage area to site-stores.; Shifting from site-storage point to the point of application & back to the storage point or to other designated place the flushing/draind oils with in the plant area as per instruction of ENGINEER-IN-CHARGE.; Shifting & connecting transfer pump/Centrifuge/grease gun if required for charging/draind / applying from point of storage to point of application & shifting it back to its original place after Removal of dirt/grease/rust/foreign particles.; All associated Connections/Dis-connections of Hoses, Blinding/De-Blinding of Flanged Joints, Opening /Boxing up of Threaded/Other type of joints, as applicable for job completion	L	10000		
6.6	GREASING OF GEAR BOX/ BEARINGS BY HAND/ GREASE GUN AS PER REQUIREMENT	kg	500		
7	OFFSITE SPECIAL EQUIPMENTS				
7.1	MAINTENANCE OF SMALL DRIVE TURBINES				
	Maintenance of Small Drive turbines; Alignment; Replacement of coupling hub; Over Speed Trip mechanism overhaul; TNT Valve / Latching mechanism overhaul; Gland Ring Inspection / Replacement (Both sides); Bearing inspection / replacement(Both Sides); Governor / governor coupling replacement, Job is to be done as per instruction of BCPL representative ; all relevant data are to be recorded and handed over to concerned engineer in soft and hard copy	Nos.	1		



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SL NO	ITEM DESCRIPTION	UOM	QNTY	RATE (INR)	AMOUNT (INR)
7.2	COOLING TOWER MAINTAINANCE				
7.2.1	Cooling Towers- Maintenance of Cells	No	14		
	CLEANING OF CT DECKS				
7.2.2	Isolate deck valves of either side of the Fans; Collect the different foreign materials present in the decks & thrown them away from CT surface; Clean the holes & surfaces on the deck properly; Refix/check the sprinkler nozzles in the deck and if required replace them with new ones; Clean the total surface of concerned cooling tower	No	8		
	REPLACEMENT OF SPIRAL TARGET NOZZLE				
7.2.3	Old worn out spiral target nozzles are to be removed from the deck; New nozzles to be fitted in the holes meant for water entry; Old nozzles to be collected & shifted to the scrap yard	No	50		
	CLEANING & MAINTAINANCE OF COARSE SCREENS (CW INLET)				
7.2.4	Lifting of coarse screens; Prior to lifting, isolation by stop log gate; Dismantling of coarse screen; Cleaning of coarse screen; Minor repair works i.e. Cutting/welding/fitting; Re-fitting & re-erection of coarse screens at its position	Nos	10		
	ASSISTANCE FOR STANGTHENING OF CW DUCT OVER CT BASIN BY COLD COMPOUND				
7.2.5	Provide service to assist for strengthening of CW header in CT deck as per the direction of EIC	Nos	10		
	REPAIR OF INTERCONNECTING CELL DOORS				
7.2.6	Inspect the interconnecting cell doors ; The doors are to be welded at the hinge points after alignment of the door opening	Nos	10		
	ALIGNMENT OF CT GEARBOX & MOTOR				
7.2.7	Do alignment with the motor as per standard practice and record the readings	Nos	10		



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7.2.8	PAINTING OF GEAR BOX	Nos	10		
	Clean the surface of the gear box neatly by using wire brush & cloth; Paint the body of gear box by standard enamel brush; To carry require quantity of paint to the spot from the store; Use of required consumables & manpower				
7.3	MAINT OF BORE WELL PUMPS (As per scope of work)	Nos	5		
	Removal of bore well pump & motor sets; Decoupling of pump & shifting of the motor; Assembly of Pump & Motor, shifting at site, erection of pump assembly along with column pipe by boxing up & welding of the cleat over joint.				
7.4	Loading Gantry- Maintenance of Liquid/Vapor Arm	Nos.	5		
7.5	Tank roof raising/lowering:	Nos.	5		
	Raising or lowering of height of roof offloating roof type tanks by removing split pin; locking pin; raising/lowering of roof support legs to the height required and again inserting the pin and split pin in the specified hole taking all precautions keep all the support legs in the same height as per instruction of EIC.				
7.6	Cooling tower fan angle adjustment	Nos.	10		
	CT Fan angle adjustment /checking of allfan blade using Bevel Protector as per instruction of E-I-C.				
8	MAINTENANCE OF STATIC EQUIPMENTS				
8.1	MAINTENANCE OF HEAT EXCHANGERS WITH BUNDLES OUT	Nos	5		
	HE Overhauls, tubes up to 200, bundle out				
8.1.1	Heat Exchanger overhauling, No of tubes up to 200 and tube bundle requires to be taken out, Job includes dismantling of Heat Exchanger, Pulling out the tube bundle, Cleaning of the tubes inside & outside, shell, fasteners etc., inserting the tube bundle, testing the heat exchanger, box up/dropping of test ring, plugging of leaky tubes, if any and retesting, boxing up etc. as per instruction of EIC				



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8.1.2	HE Overhauls, tubes up to 201-400, bundle out				
	Heat Exchanger overhauling, No of tubes 201 to 400 and tube bundle requires to be taken out, Job includes dismantling of Heat Exchanger, Pulling out the tube bundle, Cleaning of the tubes inside & outside, shell, fasteners etc., inserting the tube bundle, testing the heat exchanger, box up/dropping of test ring, plugging of leaky tubes, if any and retesting, boxing up etc. as per instruction of EIC	Nos	2		
8.1.3	HE Overhauls, tubes up to 401-600, bundle out				
	Heat Exchanger overhauling, No of tubes ranging from 401 to 600 and tube bundle requires to be taken out, Job includes dismantling of Heat Exchanger, Pulling out the tube bundle, Cleaning of the tubes inside & outside, shell, fasteners etc., inserting the tube bundle, testing the heat exchanger, box up/dropping of test ring, plugging of leaky tubes, if any and retesting, boxing up etc. as per instruction of EIC	Nos	2		
8.1.4	HE Overhauls, tubes up to 601-800, bundle out				
	Heat Exchanger overhauling, No of tubes ranging from 601 to 800 and tube bundle requires to be taken out, Job includes dismantling of Heat Exchanger, Pulling out the tube bundle, Cleaning of the tubes inside & outside, shell, fasteners etc., inserting the tube bundle, testing the heat exchanger, box up/dropping of test ring, plugging of leaky tubes, if any and retesting, boxing up etc. as per instruction of EIC	Nos	2		
8.1.5	HE Overhauls, tubes up to 801-1500, bundle out				
	Heat Exchanger overhauling, No of tubes ranging from 801 to 1500 and tube bundle requires to be taken out, Job includes dismantling of Heat Exchanger, Pulling out the tube bundle, Cleaning of the tubes inside & outside, shell, fasteners etc., inserting the tube bundle, testing the heat exchanger, box up/dropping of test ring, plugging of leaky tubes, if any and retesting, boxing up etc. as per instruction of EIC	Nos	1		
8.2	MAINTENANCE OF HEAT EXCHANGERS WITH BUNDLES NOT TAKEN OUT				
8.2.1	HE Overhauls, tubes up to 200, bundle not taken out				
	Heat Exchanger overhauling, No of tubes up to 200 and tube bundle does not require to be taken out, Job includes opening of Heat Exchanger Covers, Cleaning of the tubes fasteners etc., testing the heat exchanger, box up/dropping of test ring, plugging of leaky tubes, if any and retesting, boxing up etc. as per instruction of EIC	Nos	5		
8.2.2	HE Overhauls, tubes up to 201 to 400, bundle not taken out				
	Heat Exchanger overhauling, No of tubes ranging from 201 to 400 and tube bundle does not require to be taken out, Job includes opening of Heat Exchanger Covers, Cleaning of the tubes fasteners etc., testing the heat exchanger, box up/dropping of test ring, plugging of leaky tubes, if any and retesting, boxing up etc. as per instruction of EIC	Nos	2		



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SL NO	ITEM DESCRIPTION	UOM	QNTY	RATE (INR)	AMOUNT (INR)
8.2.3	HE Overhauls, tubes up to 401 to 600, bundle not taken out				
	Heat Exchanger overhauling, No of tubes ranging from 401 to 600 and tube bundledoes not require to be taken out, Job includes opening of Heat Exchanger Covers, Cleaning of the tubes fasteners etc., testing the heat exchanger, box up/dropping of test ring, plugging of leaky tubes, if any and retesting , boxing up etc. as per instruction of EIC	Nos	2		
8.2.4	HE Overhauls, tubes up to 601 to 800, bundle not taken out				
	Heat Exchanger overhauling, No of tubes ranging from 601 to 800 and tube bundledoes not require to be taken out, Job includes opening of Heat Exchanger Covers, Cleaning of the tubes fasteners etc., testing the heat exchanger, box up/dropping of test ring, plugging of leaky tubes, if any and retesting , boxing up etc. as per instruction of EIC	Nos	2		
8.2.5	HE Overhauls, tubes up to 801 to 1500, bundle not taken out				
	Heat Exchanger overhauling, No of tubes ranging from 801 to 1500 and tube bundledoes not require to be taken out, Job includes opening of Heat Exchanger Covers, Cleaning of the tubes fasteners etc., testing the heat exchanger, box up/dropping of test ring, plugging of leaky tubes, if any and retesting , boxing up etc. as per instruction of EIC	Nos	1		
8.2.6	HE Overhauls, tubes more than 1500, bundle not taken out				
	Heat Exchanger overhauling, No of tubes more than 1500 and tube bundledoes not require to be taken out, Job includes opening of Heat Exchanger Covers, Cleaning of the tubes fasteners etc., testing the heat exchanger, box up/dropping of test ring, plugging of leaky tubes, if any and retesting , boxing up etc. as per instruction of EIC	Nos	1		
8.3	AIR FIN COOLER MAINTENANCE				
8.3.1	Air fin cooler overhauling up to 100 tubes				
	Air fin cooler overhauling, No of tubes up to 100 tubes and tube length more than 8.5 m- Job includes opening of air fin cooler covers, cleaning of the tubes, fins, fasteners etc., testing of air fin cooler, plugging of leaky tubes, if any and retesting, boxing up as per instruction of EIC.	Nos	1		
8.3.2	Air fin cooler overhauling ranging from 101 to 200 tubes				
	Air fin cooler overhauling, No of tubes ranging from 101 to 200 tubes and tube length more than 8.5 m- Job includes opening of air fin cooler covers, cleaning of the tubes, fins, fasteners etc., testing of air fin cooler, plugging of leaky tubes, if any and retesting, boxing up as per instruction of EIC.	Nos	1		

**ANNUAL MAINTENANCE SERVICE CONTRACT FOR MECHANICAL WORKS OF BCPL****SCHEDULE OF RATES (SOR)****PART-B (SECTION 2):: CPP, Offsites & IOP units including Pipelines, Central Workshop, RWIW and Railway Siding terminals****SUB- SECTION:: 2 (ii)- EQUIPMENT RELATED MAINTENANCE ACTIVITIES**

SL NO	ITEM DESCRIPTION	UOM	QNTY	RATE (INR)	AMOUNT (INR)
8.3.3	Air fin cooler overhauling ranging from 201 to 300 tubes	Nos	1		
	Air fin cooler overhauling. No of tubes ranging from 201 to 300 tubes and tube length more than 8.5 m- Job includes opening of air fin cooler covers, cleaning of the tubes, fins, fasteners etc., testing of air fin cooler, plugging of leaky tubes, if any and retesting, boxing up as per instruction of EIC.				
8.4	Gasket replacement & Opening/ boxing up of end covers/dish ends:Shell & Tube Type Heat Exchangers				
	Opening & boxing up of end covers/dish ends for gasket replacement, inspection, attending leakages; It includes removal of all end covers/dished end and connecting nozzles; Cleaning of gasket seating area of end covers as well as exchanger/tube bundle.; Cleaning of fasteners; Box up of dish ends and all associated nozzles; Leak test				
8.4.1	Up to 16"	NOS	10		
8.4.2	above 16" - Up to 36"	NOS	8		
8.4.3	above 36"	NOS	4		



ANNUAL MAINTENANCE SERVICE CONTRACT FOR MECHANICAL WORKS OF BCPL

SCHEDULE OF RATES (SOR)

PART-B (SECTION 2):: CPP, Offsites & IOP units including Pipelines, Central Workshop, RWIW and Railway Siding terminals

SUB- SECTION:: 2 (ii)- EQUIPMENT RELATED MAINTENANCE ACTIVITIES

SL NO	ITEM DESCRIPTION	UOM	QNTY	RATE (INR)	AMOUNT (INR)
8.5	Overhaul of Plate Frame Exchanger- Including Hydro-testing and Re-gasketing , Diaassembling & Assembling				
	Removal of cover plates.; Cleaning of both sides of each plate by wire brush and water spraying.; Fixing of gasket to the plate properly.;	NOS	5		
	Tightening of end plates properly.; Wire brushes are in contractor's scope.				
8.6	Surface Condenser end cover opening & box up	NOS	5		
9	MAINTENANCE OF VESSELS & COLUMNS				
9.1	Vessels Hydrotest in CUM:				
	Vessels Hydrotest in CUM: Making arrangement for hydrotesting/ pneumatic testing ; carrying out hydrotesting/ pneumatic testing as specified including all other miscellaneous works like blinding & debinding including supply of tools; tackles;Pressure gauge, testing pumps and manpower necessary to complete the job to the satisfaction of E.I.C.	NOS	2		
9.2	Vessel internal repair & cleaning in CUM				
	Vessel internal repair & cleaning in CUM	NOS	2		
PART-B SECTION-2 (ii) - EQUIPMENTS MAINTENANCE TOTAL AMOUNT (INR)=					

%

Applicable Service tax in %

(i) Evaluation shall be done on the basis of net of amount . Service tax shall be applicable as per prevailing Govt. rules at the time of invoicing.

(ii) Considering nature of job in this section (Part-B, section2(ii)), applicable rate of Service Tax is 70% on 14% .i.e. 9.80%



SCHEDULE OF RATES (SOR)

SUB-SECTION-2 (iii): SOR- MANDAYS REQUIREMENTS FOR CPP, IOPs & OFFSITES

SL NO	ITEM DESCRIPTION	UOM	Total Quantity for One year	Mandays Rate (INR)	AMOUNT (X) (INR)	AMOUNT (Y) TOWARDS OVERTIME, (INR) (20 % on Amount X)	TOTAL (X+Y) (INR)
SUPPLY OF MANPOWER : Following categories of manpower may be required for special works like Critical equipments routine/schedule maintenance/during emergency shutdown/breakdown/during unforeseen incidents / requirements in the plant or welding works/piping modification and any other site activities as per EIC's Instruction based on site requirements. It must be noted that the services of these manpower may be required any time during 24 hrs.							
1.1	Highly Skilled- Mechanical Maintenance Supervision Assistance Services	Mandays	3100				
1.2	Highly Skilled- Mechanical Assistance Services	Mandays	2480				
1.3	Skilled- Mechanical Maintenance Assistance Services	Mandays	13020				
1.4	Semi Skilled-Mechanical Maintenance assistance services	Mandays	7440				
1.5	Unskilled - Mechanical Mianenance Helping Assistance Services including General cleaning/house keeping etc	Mandays	16120				
PART-B SECTION-2 (iii) - TOTAL MANDAYS(MAD) AMOUNT INCLUDING OVERTIME (INR)=							
Applicable Service tax in %							%

(i) Evaluation shall be done on the basis of net of amount . Service tax shall be applicable as per prevailing Govt. rules at the time of invoicing.

ii) Considering nature of job in this section (Part-B, Section 2 (Iii)), applicable rate of Service Tax is 14%