

# **OIL & GAS DEVELOPMENT COMPANY LIMITED**



**TENDER ENQUIRY NO. PROC-SERVICES/CB/P&P-4756/2020**

**HIRING OF SERVICES FOR EXECUTION OF ATA-2020 JOBS AT**  
**UCH-1**

## **Note:**

Bid bond of **PKR 1,000,000/- (Pak Rupees One Million Only)** must be submitted with the technical bid. Please see tender documents for further detail.

The master set of tender documents (services) uploaded on OGDCL website ([www.ogdcl.com](http://www.ogdcl.com)) is the integral part of this TOR.



**OIL & GAS DEVELOPMENT COMPANY LIMITED**



## **UCH-I GAS PROCESSING PLANT**

---

---

### **ATA-2020 MAIN EXECUTION CONTRACTOR EXPLANATORY NOTES**

1. The Owner, **Oil & Gas Development Company Limited (OGDCL)** is interested in inviting bids for the provision of services (Mechanical, Electrical & Instrumentation) at their UCH-I Gas Processing Plant for the execution of the Annual Turnaround (ATA) 2020 maintenance activities from reputable companies in this field.
2. The tentative schedule of annual shutdown of UCH-I Gas Plant is from 18-10-2020 to 30-10-2020 (13 days), only 10 days should be available for maintenance activities and remaining 01 day will be required for the shutting down and 02 days for startup activities.
3. The contractor shall develop and submit a detailed work schedule including mobilization and preparatory works prior to shutdown.
4. The Contractor shall quote separate rate in PKR for each activity against the quantities mentioned in the scope of work.
5. The items mentioned in the scope of work consist of furnishing all plant, labor, equipment, machinery, scaffolding and materials for completing the work. The work shall be done, complete in all respects in accordance with the requirements and owner's instructions at site.
6. The Quantities contained in the scope of work for each activity are estimated and liable to change (increase, decrease or omitted) when the work is actually executed. The Owner does not expressly or by implication guarantee that actual quantities of work to be performed will correspond to the scope of work submitted with this tender document. The payment to be made to the Contractor shall be based on the actual quantity of work performed.
7. The Contractor shall be responsible for carrying out all work, complete in all respects, according to the scope of work. Any item of work required for completion but not expressly indicated in the scope shall be deemed to have been included in the unit rates quoted by the Contractor.
8. The successful contractor will be required to submit detailed procedures for undertaking shutdown jobs especially repair works and modification jobs for Owner's approval.

9. The Contractor shall be responsible for ventilation and getting the vessels fit for entry and working environment. All other works required for equipment / piping repair works, e.g. removal / installation of internals, temporary supports, lighting, ventilation, insulation etc., shall be the Contractor's responsibility.
10. Contractor shall undertake welding procedures qualification & welder qualification and all welding shall be performed by qualified Welders. The brand of electrode used for Qualification shall not be changed for Production Welding. (Contractor shall use electrodes/filler wires of reputable brands of European Origin e.g. ESAB, LINCON, etc.)
11. The works are to be carried out on a fast track basis and it is, therefore, essential that the Contractor shall be prepared to execute the work on a round the clock basis (day & night shift) including on holidays.
12. Unit rates quoted by bidder shall be firm. No extra payments on account of escalation in prices due to any reason shall be admissible.
13. Contractor must quote unit rate per dia. inch of pipe welding (separate rate for CS & SS material) & per Kg of structure welding that will also be applicable for any additional job during ATA.
14. The Contractor shall be paid only for the work duly approved by Owner's representative. Any rework due to poor quality, demonstrated by NDT results & inspection by OGDCL shall be on Contractor's account.
15. In case the contractor fails to arrange resources (tools, tackles, consumables, skilled manpower etc.) for execution of any job mentioned in scope of work, OGDCL will arrange/provide its resources to execute the job then the cost double the amount quoted by contractor against that specific job/equipment/area/group will be deducted from final invoice of the contractor.
16. The work is being executed within the plant during shutdown and the Contractor shall, therefore, abide by all safety rules and regulations required to be followed by the Owner.
17. The Contractor shall ensure deployment of skilled painters for painting jobs and proper surface preparation and application of primer and top coat, as per applicable industrial standards.
18. Removal/Re-installation of insulation where required/applicable shall be the responsibility of Contractor.
19. The contractor will arrange cranes and all other lifting/rigging gears for all activities to be carried out during ATA.

20. The Owner for any job will not provide any tools to contractor. Otherwise owner's representative will be liable to deduct the charges accordingly.
21. The contractor manpower should be well experienced/skilled in their respective crafts.
22. HSEQ Rules & Regulations will be strictly observed.
23. All the participating companies/contractors should have at least 5 years of similar experience especially in turnaround of Oil & Gas, Petrochemical & Fertilizers Plant.

24. **REFRACTORY WORK:**

The contractor will arrange the material required for the refractory repair work of Incinerators (UCH-I & UCH-II), Boilers (UCH-I) & Hot Oil Heaters (UCH-II). The rough estimated material required for repair work is given as below:

- |  |               |
|--|---------------|
| (i)- Cow/Ceramic Wool (2'x 16' x 1" thk. Roll) | Qty: 04 Rolls |
| (ii)- Fire Cement (25 Kg Bag)                  | Qty: 20 Nos.  |
| (iii)-Castable (25 kg Bag)                     | Qty: 60 N0s.  |
| (iv)-Anchors with lock (SS)                    | Qty: 25 Doz.  |

The actual quantities of material should be confirmed after initial inspection of equipments and it is the responsibility of contractor to arrange the material accordingly.

25. **Stress Relieving for modification jobs piping and strippers**

- All repair welds shall be stress relieved.
- Stress Relieving of existing welds shall be undertaken where weld quality is acceptable as per NDT results.
- Local Heat Treatment may be carried out using electric heaters (Bands) covered by insulation. Temperature shall be noted by thermocouples and recorded by automatic recorders. Detailed procedures shall be prepared and submitted by the Contractor for Owner's approval.
- Following procedure may be adopted for stress relieving of welds:
  - Heat up to 600 – 620 °C @ 100 °C per hour
  - Hold at 600 – 610 °C for 1-hour minimum.
  - Slow cool @ 100 °C per hour from 600 to 300 °C.
  - Still air cool by removing insulation, from 300 °C to atm. temp.
- Take hardness profile of each weld to check if it is < 22 HRC.

- The above procedures have only been provided as guidelines. Contractor shall develop and submit detailed procedures for Owner's approval for mod job and stripper repair work.

26. **INSPECTION/REPAIR/TESTING OF VALVES:**

- The Contractor shall quote separate rates for each/individual valve.
- Individual tags (include Asset Tag & Sr. # as per SOW) shall be installed on each valve for identification of location before dismantling of valve from site.
- Contractor shall submit the method statement for testing of valves with respect to the standards specified in the references below.
- For repair and build up of seats of valves contractor shall use electrodes/filler wires of reputable brands of European Origin e.g. ESAB, LINCON, etc.
- All gate valves will be tested from both sides i.e. front and back.
- Pressure testing of valves will be carried out as per applicable ASME Code.
- Lapping of valve seats shall be carried out on high-level precision machine.

27. Work methodologies of Jobs (modification jobs, valve testing/repairing, Cleaning of vessels, Columns, heat exchangers and repair work of leakages in piping and pressure vessels and PWHT) will be developed by keeping in view of under-mentioned references and requirements. Furthermore contractor shall submit the welding procedure specifications with supporting PQR, method statement of repair jobs of Amine Stripper, hydro testing of mechanical valves, hydro testing of piping involved in modification jobs at least two weeks before the commencement of ATA for Owner's approval.

**References:**

- ASME Sec II Part-A (Ferrous material Specifications)
- ASME Sec II Part-C (Specifications for welding rods, electrodes and filler materials)
- ASME VIII Div-I (Rules for Construction of Pressure Vessels)
- ASME Sec IX (Welding and Brazing Qualifications)
- ASME B31.3 (Process Piping)
- ASME Sec V (Non Destructive Examination)
- API-510 (Code for Inspection of pressure vessels repair, alteration and re-rating)
- API-572 (Inspection of Pressure Vessels)
- API-570 (Inspection, Repair, Alteration and re-rating of piping)
- API-598 (Valves Inspection & Testing)
- MSS-SP-61 (Pressure Testing of Steel Valves)
- NACE MR-0175
- OGDCL's Specifications & HSEQ Manual

# OIL & GAS DEVELOPMENT COMPANY LIMITED

## UCH-I GAS PROCESSING PLANT - ATA 2020 (MECHANICAL SCOPE OF WORK)

Act #	Tag #.	Job Description	Specifications	Tools Required	Remarks	Qty	Unit Rate
<b>H2S REMOVAL PLANT (TRAIN-10 &amp; 20) - 02 UNITS:-</b>							
<b>Pre-shutdown Activities</b>							
1		Connection for N2 Pumper					
2		Depressurising and N2 purging					
3		Blinding of battery limits					
4		Installation of scaffoldings as per each equipment job access requirement					
<b>Post-shutdown Activities</b>							
1		Deblinding of battery limits					
2		Leak Testing and N2 purging					
3		Removal of all scaffoldings					
4		Overall housekeeping/Area Cleaning					
<b>GROUP-A: COLUMNS:-</b>							
<b>MA1</b>	<b>10C200</b>	<b>Amine Stripper (01 No.)</b>				<b>1</b>	
1		Blinding	Height of Stripper = 90 ft	Strik.Sp: 65 mm			
2		Opening of manways	I.D. of Stripper = 132 in.	Comb.Sp.14mm (Trays)			
3		Ventilation / Safety clearance	No. of trays = 18	Socket Set,			
4		Initial Inspection	I.D. of Manway = 20 in.	Scaffolding Material			
5		Inplace Cleaning of all trays		Adjustable Spanner			
6		Cleaning of Column Shell internal, vortex breaker, distributor/Seal Pan, LG's/Lt's etc.					
7		Straightening/repair of damaged trays by removing, if any					
8		Internal inspection of Column Shell for erosion/corrosion and repair/buildup, if any required.					
9		Inspection/DPT of Bottom Shell S.S. Lining and repair/rebuild if required.					
10		Reinforcement/replace ment of existing lining plates, if required.					
11		Final inspection					
12		Boxup					
13		Deblinding					

<b>MA2</b>	<b>20C200</b>	<b>Amine Stripper (01 No.)</b>				<b>1</b>	
1		Blinding	Height of Stripper = 90 ft	Strik.Sp: 65 mm			
2		Opening of manways	I.D. of Stripper = 132 in.	Comb.Sp.14mm (Trays)			
3		Ventilation / Safety clearance	No. of trays = 18	Socket Set,			
4		Initial Inspection	I.D. of Manway = 20 in.	Scaffolding Material			
5		Inplace Cleaning of all trays	Empty Weight = 70 Tons	Adjustable Spanner			
6		Cleaning of Column Shell internal, vortex breaker, distributor/Seal Pan, LG's & LTs etc.					
7		Straightening/repair of damaged trays by removing, if any					
9		Final inspection					
10		Boxup					
11		Deblinding					
<b>MA3</b>	<b>10C100</b>	<b>Amine Contactor (02 Nos.)</b>				<b>2</b>	
1	<b>&amp;</b>	Blinding	Height of Contactor=30 ft	Strik.Spanner: 65 mm			
2	<b>20C100</b>	Opening of manways	I.D. of Contactor = 114 in.	Comb.Sp.14mm (Trays)			
3		Ventilation / Safety clearance	No. of trays = 06	Socket Set,			
4		Initial Inspection	I.D. of Manway = 20 in.	Scaffolding Material			
5		Dismantling/removal of demisters cleaning & installation		Adjustable Spanner			
6		Inplace complete Cleaning of trays					
7		Mech.Cleaning of Column Shell internal, vortex breaker, distributor/Seal Pan, LG's & LTs etc.					
9		Final inspection					
10		Boxup					
11		Deblinding					
<b>MA4</b>	<b>30C100</b>	<b>Glycol Contactor c/w Integral Scrubber V101 (01 Nos.)</b>				<b>1</b>	
1		Blinding	Height of Column = 37 ft	Strik.Sp: 65,50,32 mm			
2		Opening of top & bottom manways	I.D. of Column = 72 in.	Hammers & Bars			
3		Ventilation/Safety clearance	Manway Size = 20" x 600CL	Safety Belts			
4		Initial Inspection	Internals = Structured Packing				
5		Cleaning of vessel Internals & LG's	Material: S.S.(Duplex)				
6		Replacemet of Inspection Window Gasket & Installation of Riser Chimney Missing Covers, if any					

8		Final inspection					
9		Boxup					
10		Deblinding					
<b>GROUP-B: VESSELS:-</b>							
<b>MB1</b>	<b>M200</b>	<b>Slug Catcher (01 No.)</b>				<b>1</b>	
1		Blinding	Horizontal Vessel	Strik.Span:41,46,75 mm			
2		Opening of manways	Size: 78" ID x 204" LG	Comb.Span.:27,32 mm			
3		Ventilation/Safety clearance	I.D. of Manway = 20 in.	Adjustable Spanner			
4		Internal Inspection of vessel and demister		Scaffolding			
5		Cleaning of complete vessel, Demister & LG's.					
7		Final inspection					
8		Boxup					
9		Deblinding					
<b>MB2</b>	<b>V-100</b>	<b>LP Separator (01 No.)</b>				<b>1</b>	
1		Blinding	Horizontal Vessel	St.Sp.:24,27,50,65 mm			
2		Opening of manways	Size: 78" ID x 204" LG	Comb.Sp.: 24,27mm			
3		Ventilation/Safety clearance	I.D. of Manway = 20 in.	Adjustable Spanner			
4		Internal Inspection of vessel					
5		Cleaning of vessel, demisters & LG's.					
6		Final inspection					
7		Boxup					
8		Deblinding					
<b>MB3</b>	<b>10V202</b>	<b>Amine Reflux Drum (02 Nos.)</b>				<b>2</b>	
1	<b>&amp;</b>	Blinding	I.D.=7 ft	Striking Spanner:32 mm			
2	<b>20V202</b>	Opening of manways	Length= 10 ft	General Tool Box			
3		Ventilation/Safety clearance	Manway = 20 in.	Internal Scaffolding			
4		Internal Inspection of vessel					
5		Dismantling/removal of demisters & repair if any					
6		Cleaning of vessel, demisters & LG/LT					
7		Re-installation of demisters					
9		Final inspection					
10		Boxup					
11		Deblinding					
<b>MB4</b>	<b>10V200</b>	<b>Amine Flash Drum (02 Nos.)</b>				<b>2</b>	
1	<b>&amp;</b>	Blinding	I.D of Vessel = 126 in.	Str.Spanner: 36, 41 mm			
2	<b>20V200</b>	Opening of top dome & bottom manway	Length of Vessel = 28ft S-S	Open/Ring Sp: 27mm			
3		Ventilation/safety clearance	Top Dome= 30 in OD x 33 in LG	Crane			



4		Initial Inspection of vessel	Bottom manway = 20in I.D.				
5		Dismantling/removal of demisters & repair if any					
6		Internal cleaning of complete Vessel, LG/LT					
7		Cleaning of demisters & re-installation					
9		Final Inspection					
10		Box up					
11		Deblinding					
<b>MB5</b>	<b>10V201</b>	<b>Amine Surge Drum (02 Nos.)</b>				<b>2</b>	
1	<b>&amp;</b>	Blinding	I.D of Surge Drum = 108 in	Strik.Span: 36, 41 mm			
2	<b>20V201</b>	Opening of manways	Length of Vessel = 30 ft S-S				
3		Ventilation/safety clearance	I.D of manway = 20 in				
4		Internal cleaning of complete Vessel & LG's.					
5		Inspection					
6		Box up					
7		Deblinding					
<b>MB6</b>	<b>90X903</b>	<b>Incinerator K.O Vessel (01 No.)</b>				<b>1</b>	
1		Blinding	Vessel size: O.D. 60" x 28' LONG				
2		Opening of manways	Manway: 20"X150CL				
3		Ventilation/safety clearance					
4		Internal cleaning of complete vessel.					
5		Cleaning of LG's/LT's of K.O. vessel					
7		Inspection					
8		Box up					
9		Deblinding					
<b>MB7</b>	<b>90V100A/B</b>	<b>Flare Knock Out Vessel (02 Nos.)</b>				<b>2</b>	
1		Blinding	I.D of Surge Drum = 135 in				
2		Opening of manway	Length of Vessel = 288 in S-S				
3		Ventilation/Safety clearance	I.D of manway = 20 in				
4		Internal Inspection of vessel					
5		Cleaning of vessel & LG's					
7		Final inspection					
8		Boxup					
9		Deblinding					
<b>MB8</b>	<b>90V902</b>	<b>Amine Sump (01 No.)</b>				<b>1</b>	
1		Decanting of Sump	Vessel size: I.D. 84" x 127" T/T	Crane			
2		Opening of manway/removal of A.Sump Pump	Manway: 20"				
3		Inspection of Pump					

		and rectification if any				
4		Internal cleaning of Sump				
5		Box up after inspection				
<b>MB9</b>	<b>50V100</b>	<b>Glycol Sump (01 No.)</b>				<b>1</b>
1		Decanting of Sump	Vessel size: I.D. 40" x 120"T/T			
2		Opening of manway/Removal of Sump Pump	Manway: 20"			
3		Inspection of Pump and rectification if any				
4		Internal cleaning of Sump				
5		Inspection of Vessel				
6		Box up				
<b>GROUP-C: HEAT EXCHANGERS:-</b>						
<b>MC1</b>	<b>10E100</b>	<b>Inlet Gas Cooler Heater (02 Nos.)</b>				<b>2</b>
1	<b>&amp;</b>	Blinding/Isolation	Type:U tube,No.of tubes=278	Crane, Chain Blocks,		
2	<b>20E100</b>	Opening of Channel Head Cover	278 U-Tubes x 1"(OD) x 0.065"			
3		Removal of bundle	(AW)x222" LG 1.25 square pitch			
4		Inspection of bundle				
5		Cleaning of tubes & tube bundles by Water jetting				
6		Cleaning of Shell and channel				
7		Insertion of Bundle / Replacement of One Bundle (If Available)				
8		Pressure Testing				
9		Final Inspection				
10		Box Up				
11		Deblinding				
<b>MC2</b>	<b>10E200A/B</b>	<b>X-Heat Exchanger (04 Nos.)</b>				<b>4</b>
1	<b>&amp;</b>	Opening of Inlet/Outlet nozzles	Plate Type Heat Exchanger		Arrangement for chem.	
2	<b>20E200A/B</b>	Provision of connection for chemical cleaning	No. of Plates = 431		circulation is available	
3		In place chemical cleaning of plates.	Size of Plate =		at site.	
4		Removal of connections				
5		Cleaning/Repair of Strainers				
6		Box up				
7		Area cleaning				
<b>MC3</b>	<b>10E201</b>	<b>Amine Stripper Reboiler (02 Nos.)</b>				<b>2</b>
1	<b>&amp;</b>	Opening of Channel Head Covers	Type:l-Single pass,No.of tubes=2162	Sling, Shackles		
2	<b>20E201</b>	Cleaning of tubes by Hydrojetting	Size=1"(OD)x.065"(AW)x24'-0"(LG)	Strik.Span: 27,30 mm		

3		Removal of Choking from Steam FT Bottles, Isolating Valve and Legs	Channel head size: O.D. = 69 1/8"	Hammers, Crow bar			
4		Pressure Testing					
5		Final Inspection	B .C. = 67 1/2"	Scaffolding material			
6		Box up	Over all Length = 33ft & 9 in.	Crane.			
8		Area cleaning					
<b>MC4</b>	<b>10E202</b>	<b>Amine Reflux Condenser (02 Nos.)</b>				<b>2</b>	
1	<b>&amp;</b>	Opening of Channel Head Covers	Type:I-Double pass,No.of tubes =753	Sling			
2	<b>20E202</b>	Cleaning of tubes Mechanically & with Aquablaster	Size=1"(O.D)x.065"(A.W.)x2 4'-0"(LG.)	Strik.Span: 27,30 mm			
3		Hydro Pressure testing	Channel head size:O.D.=49 1/4"	Hammers,			
4		Final Inspection	B .C. =47 5/8 "	Crow bar,			
5		Box up of Channel Head Covers	Over all Length = 29 ft& 4 in.	Scaffolding material			
6		Area cleaning		Crane			
<b>MC5</b>	<b>10E203</b>	<b>Amine Solution Cooler (02 Nos.)</b>				<b>2</b>	
1	<b>&amp;</b>	Opening of Channel Head Covers	No. of tubes = 1184	Chain Block: 10 ton	Arrangement for chem.		
2	<b>20E203</b>	Cleaning of tubes with Aquablaster machine.	Tube O .D. = 1 in.	Strik.Span: 27,30,32mm	circulation is available		
3		Chemical Cleaning of Shell Side	Triangle pitch= 1.250	Comb. Span: 27,32mm	at site.		
4		Hydropressure testing	M.W.Thickness=0.075	Crow bar, Pipe Wrench			
5		Final Inspection	Length= 576 in. or 48 ft	Crane			
6		Box up of Channel Head Covers	No. of passes= One				
7		Area cleaning (house keeping)	Channel cover O.D.= 53 5/8 "				
<b>GROUP - D: ROTARY EQUIPMENTS:-</b>							
<b>MD1</b>	<b>10P201A/B</b>	<b>Amine Circulation Pump (04 Nos)</b>				<b>4</b>	
1	<b>&amp;</b>	Decoupling of Pump & Motor	6-stage Centrifugal M type pump	Striking Spanner 36,41,			
2	<b>20P201A/B</b>	Initial Alignment check	Capacity=1800 gpm.	50 mm.			
3		Dismantling of bearing housings	Dis.Pressure= 930 psig	General Tool Box			
4		Removal of bearings for inspection	Suc.x Disch. = 8 x 6 in				
5		Cleaning/Repair/repl. of damage parts, if any	Make: Union Pumps Co., USA				
6		Service of Mechanical Seal (Dismantling, cleaning/lapping & re-assembly)					
7		Assembling of bearing housing					
8		Painting of Pump Body/Casing & Skid					
9		Cleaning of suction & seal flush line strainers					

10		Alignment				
11		Area cleaning				
<b>MD2</b>	<b>10P200A/B</b>	<b>Amine Booster Pump (04 Nos.)</b>				<b>4</b>
1	<b>&amp;</b>	Decoupling of Pump & Motor	Single-stage Centrifugal pump	Strik.Span. 32,36,41mm		
2	<b>20P200A/B</b>	Dismantling of pump casing	Capacity=1980 gpm.	Comb.Spanner 24mm		
3		Inspection of casing	Pressure= 52 psig	General Tool Box		
4		Service of Mechanical Seal if any having leakage problem.	Suc.x Disch. = 10 x 8 in			
5		Replacement of bearings if required.	Make: Union Pumps Co., USA			
6		Assembling of pump				
7		Painting of Pump Body/Casing & Skid				
8		Alignment				
9		Cleaning of suction & seal flush line strainers				
10		Area cleaning				
<b>MD3</b>	<b>10P202A/B</b>	<b>Amine Reflux Pumps (04 Nos.)</b>				<b>4</b>
1	<b>&amp;</b>	Dismantling of pump	Single-stage Vertical Centrifugal pump	General Tool Box		
2	<b>20P202A/B</b>	Inspection of casing	Capacity=100 gpm.			
3		Cleaning/Repair/repl. of damage parts/M.Seal etc.	Dis.Pressure= 66 psig			
4		Assembling of pump	Suc.x Disch. = 3 x 2 in			
5		Cleaning of suction & seal flush line strainer				
6		Painting of Pump outer body/casing				
7		Area cleaning				
<b>MD4</b>	<b>10-P-200 A/B</b>	<b>Glycol Circulation Pump (06 Nos.)</b>				<b>4</b>
1	<b>20-P-200 A/B</b>	Inspection of power end, i.e. sleeve bearings, crankshaft, crosshead pin & bush for any wear & tear and replace if required	Reciprocating Capacity = 42.2 US GPM Make: Union Pumps Co., USA	General Tool Box		
2		Inspection of fluid end, i.e. plunger, inlet/outlet valves, gland pusher/ bush/packing etc. for any wear & tear and replace if required	Dis. Pressure = 935.1 psia Size/type : 2 ½ X 3 TD 60			
3		Inspection of sheeves/pulleys & V-belts and replace (if required)				
4		Replacement of lube oil				
5		Alignment				
6		Area claining (House keeping)				
<b>MD5</b>	<b>90X903</b>	<b>Cooling Tower Fan/Gearbox-A/B/C/D (04 Nos.)</b>				<b>4</b>
1		Dismantling, Cleaning, Repairing & Painting of Fan Blades & hub	AMARILLO Right Angle Gear Drive	General Tool Box		
2		Dismantling of Gearbox	Service Factor: 2.0 HP			

3		Shifting of Gearbox to Workshop	RPM Input: 1750				
4		Inspection / repair of Gearboxes	Ratio: 14:1 Reducing				
5		Grey epoxy paint to outer surface of gear box and foundation structure channels.					
6		Re-installation of Gear boxes and Fans					
7		Replacement of Lube Oil					
8		Alignment					
9		Area cleaning					
<b>MD6</b>	<b>LP-1/2/3</b>	<b>FD Fan LP Boiler #1 , 2 &amp; 3 (03 Nos.)</b>				<b>3</b>	
1		Opening of FD Fan inspection windows.		General Tool Box			
2		Inspection/cleaning of Fan duct/dampers.					
3		Replacement of bearings of FD Fan					
4		Alignment					
5		Area cleaning					
<b>MD7</b>	<b>EGT-1,2,3,4</b>	<b>Gas Turbine (04 Nos)</b>				<b>4</b>	
1		Inspection/Cleaning of EGT's Fuel Gas Separators.	EUROPEAN GAS TURBINE	General Tool Box			
2		Inspection / replacement of Fuel Gas Skid Filters	MAKE: SIEMENS, UK				
4		Cleaning/Replacement of Air Intake Filters (80 nos.each unit)	CAP: 4.9 MW AT 15°C				
5		External Cleaning of Lube Oil Coolers	MODEL: SGT-100-1S				
6		Overall cleaning of Turbine enclosure					
9		Area cleaning					
<b>MD1</b>	<b>SGT-1/2/3</b>	<b>UCH-II Gas Turbines (03 Nos)</b>				<b>3</b>	
1		Enclosure Inspection & Cleaning	SIEMENS GAS TURBINE	General Tool Box			
2		Cleaning of mist. Eliminator panels of Air-Intake Hood	MAKE: SIEMENS-UK				
3		Cleaning & Replacement of Air Intake Filters	MODEL: SGT-100 -1S				
4		External Cleaning of Lube Oil Coolers					
5		Overall cleaning of Turbine enclosure					
6		Inspection/replacement of Fuel Gas skid K/O Filter Coalescer Elements.					
7		Cleaning of fuel gas and liquid fuel skids					
9		Ventilation air inlet Filter/duct cleaning					
10		Final Inspection					
11		Area cleaning					
<b>MD8</b>	<b>X-200A-D</b>	<b>Instrument Air &amp; Nitrogen Package</b>				<b>6</b>	

		<b>Compressors (06 Nos.)</b>				
1	<b>X-201A/B</b>	Overall cleaning of enclosure	MAKE: INGERSOLL-RAND &	General Tool Box		
2		Alignment checks and inspection/cleaning of complete packages	QUINCY			
3		Cleaning of Oil Cooler/Radiator	Type: Screw Compressor			
4		Replacement of Filter Elements & Coolant, if required				
5		Area cleaning				
<b>MD9</b>	<b>P-220</b>	<b>Produced Water Drain Pump ( 01 Nos.) [PF-Prod. Scope]</b>				<b>1</b>
1		Inspection / dismantling of pump	Single-stage Horizontal Centrifugal pump	General Tool Box		
2		Cleaning/Repair/repl. of damage parts/M.Seal etc.	Suc.x Disch. = 1 x 2 in			
3		Assembling of pump	Capacity=10 gpm.			
4		Cleaning of suction & seal flush line strainer				
5		Painting of outer body of pump				
6		Area cleaning				
<b>MD10</b>	<b>P-101</b>	<b>Condensate Loading Pumps (02 Nos.) [PF-Prod. Scope]</b>				<b>2</b>
1	<b>&amp;</b>	Inspection / dismantling of pump	Single-stage Horizontal Centrifugal pump	General Tool Box		
2	<b>P-102</b>	Cleaning/Repair/repl. of damage parts/M.Seal etc.	Suc.x Disch. = 3 x 2 in			
3		Assembling of pump	Capacity=13 gpm.			
4		Cleaning of suction & seal flush line strainer				
5		Painting of outer body of pump				
6		Area cleaning				
<b>GROUP-E: UTILITIES:-</b>						
<b>ME1</b>	<b>170S101</b>	<b>ETP Sump Pit</b>				<b>1</b>
1		Internal cleaning i.e.removal of mud/slurry	Size :4.0 M X 3.0 M X 3.6 M	Scrapper and buckets		
2		Cleaning of Suction Foot Valve				
3		Inspection				
<b>ME2</b>	<b>90PF910</b>	<b>Pressure Filters (02 Nos.)</b>				<b>2</b>
1	<b>A/B</b>	Scaffolding	Vessel Size: 98" I.D.x 145" HT			
2		Opening of manways.	Manway: 20" x 150 CL			
3		Removal, Cleaning & Charging of gravel/sand/resin (optional) i.e. if required				
4		Painting of Shell Internal and distributor				
5		Inspection				
6		Box up				
<b>ME3</b>	<b>90SF910</b>	<b>Side Stream Filters</b>				<b>2</b>

		<b>(02 Nos.)</b>				
1	<b>B/C</b>	Scaffolding	Vessel Size: 98" I.D. x 145" HT			
2		Opening of top manway	Manway: 20" x 150 CL			
3		Removal & charging of gravel/sand/resin (optional) i.e. if required				
4		Painting of Shell Internal and distributor				
5		Inspection				
6		Box up				
<b>ME4</b>	<b>90V900</b>	<b>Deaerator</b>				<b>1</b>
1		Opening of manway	Manway: 20x150lb"			
2		Dismantling of top Dome	Size: 2500mm DIA x 5800mm LG			
3		Internal cleaning of vessel, LG's LT's				
4		Repair of shell internal & internal distribution pipe, nozzle(s) if required.				
5		Insulation removal / repair / reinstallation (if req.) of Steam, condensate and water lines under De-aerator				
6		Internal & External Painting of complete vessel, structure and all piping under De-aerator				
7		Inspection of nozzles				
8		Box up				
<b>ME5</b>	<b>90X902A</b>	<b>LP BOILER # 1, 2 &amp; 3 (03 Nos)</b>				<b>3</b>
1	<b>&amp;</b>	Blinding	Model # NSX-G-100	Air driven Grinders		
2	<b>90X902B</b>	Opening of manways of Combustion chamber, Mud and Steam drums.	Make(LP-1&2): National Dynamic Corporation Nebraska USA	Power Brushes for cleaning		
3	<b>&amp;</b>	Internal inspection of comb. Chamber, Mud and Steam drums.	W. Pressure = 70 psig.			
4	<b>90X902D</b>	Internal cleaning of tubes (Chem./Mech.)	Steam temperature = 315 deg.F			
5		Cleaning of burners & comb. Chamber	Max .W. Pressure = 200 psig.			
6		Repair of refractory, if any	Steam capacity = 145000 lbs/hr			
7		Cleaning of Mud & Steam drums	Tube size = 02" x 0.095 & 0.105 in.th			
8		Painting of tubes, steam drum & mud drum with apexior compound paint.	Total nos. of tubes = 1742			
9		Hydro/Pressure Test	Material of drums = SA - 516- 70			
10		Cleaning of flue gasses chimney, painting internally & externally including structure/platforms	Material of tubes = SA- 178 A			
11		Painting of Boilers outer body/casing/structure.	Make (LP-3): Descon-Lahore			

12		Surface Preparation & Access Arrangements for NDT of Boilers					
13		Inspection by Chief Inspector of Boilers					
14		Gas Fuel line strainer cleaning					
15		Inspection/Replacement of LP steam traps					
16		Box up					
17		Deblinding					
<b>ME6</b>	<b>90X902C</b>	<b>HP BOILER# 1 &amp; 2 (02 Nos.)</b>				<b>2</b>	
1	<b>&amp;</b>	Blinding	Model # HRNC-480	Air driven Grinders			
2	<b>90X902E</b>	Opening of manways of Combustion chamber, Mud and Steam drums.	Make (HP-1): WICKERS HOSKINS(M)SDN. BHD	Power Brushes for cleaning			
3		Internal inspection of comb. Chamber, Mud and Steam drums.	W. Pressure = 497 psig.				
4		Internal cleaning of tubes (Chem./Mech.)	Steam capacity= 10500 lbd/hr				
5		Cleaning of burners & comb. Chamber	Max .W. Pressure = 568 psig.				
6		Repair of refractory, if any	Test Pressure = 852 psig.				
7		Cleaning of Mud & Steam drums	Steam temperature= 477 deg.F				
8		Painting of tubes, steam drum & mud drum with apexior compound paint.	Size of water tube=02 in.dia.x0.128"th				
9		Hydro/Pressure Test	Total nos. of finned tubes = 110				
10		Surface Preparation & Access Arrangements for NDT of Boilers	Material of super heater tubes: SA-213T 12				
11		Inspection by Chief Inspector of Boilers	Material of tubes= SA-192				
12		Opening of flue gasses chimney manway. External painting of stack/chimney.	Make (HP-2): HMC, Taxila				
13		Painting of Boilers outer body/casing/structure.					
14		Inspection /Replacement of HP Steam traps					
15		Gas Fuel line strainer cleaning					
16		Box up and deblinding					
<b>ME7</b>	<b>90X903</b>	<b>COOLING TOWER</b>				<b>1</b>	
1		Cleaning of top water deck & nozzles	Type: Induced Draft Counterflow				
2		Cleaning of CT basin & pump suction pit	Design Water Circulation:27000 USGPM				
3		Cleaning, Repair and Painting of suction pit gate strainers/structure, if any	No. of Cell: 04				
4		Removal/cleaning/Re-Installation of drift eliminators	Basin Size(LxWxD): 144x48x4 ft.				



5		Inspection/Installation of damaged/fallen fills,drift eliminator supports etc.					
6		Inspection/repair of internal cell walk ways					
7		Cleaning / repair of pump suction strainers					
<b>ME8</b>	<b>90X904</b>	<b>INCINERATOR</b>				<b>1</b>	
1		Opening of manway	Manway: 24"				
2		Initial Inspection	Size: I.D. 4ft, Length: 5ft				
3		Repair of Burner duct, furnace & exhaust duct and stack refractory	Size: I.D. 10ft, Length: 37.5ft				
4		Cleaning/replacement of flame sight glasses					
5		Cleaning of burner tips					
6		Repair / replacement of ceramic wool of Combustion chamber.					
7		Cleaning of FD Fans					
8		Inspection					
9		Box up					
<b>GROUP-F: MANUAL VALVES:-</b>							
<b>MF1</b>	<b>H2S T-10</b>	<b>Manual Valves of H2S T-10</b>				Valve s list attached	<b>35</b>
1		Dismantling of Valves from location					
2		Shifting of valves to workshop					
3		Initial Testing/Inspection of valves					
4		Repair of defected valves					
5		Pressure Testing					
6		Painting of Valves with Silver/Aluminium Paint.					
7		Shifting / Installation of valves at location					
8		Replacement of Valves having size 1-1/2" & below					
9		Inplace cleaning/service & greasing of all manual valves of H2S T-10.					
<b>MF2</b>	<b>H2S T-20</b>	<b>Manual Valves of H2S T-20</b>				Valve s list attached	<b>35</b>
1		Dismantling of Valves from location					
2		Shifting of valves to workshop					
3		Testing/Inspection of valves					
4		Repair of defected valves					
5		Pressure Testing					
6		Painting of Valves with Silver/Aluminium Paint.					
7		Shifting / Installation of valves at location					

8		Replacement of Valves having size 1-1/2" & below					
9		Inplace cleaning/service & greasing of all manual valves of H2S T-20					
<b>MF3</b>	<b>Dehy.</b>	<b>Manual Valves of Dehydration</b>			Valves list attached	<b>27</b>	
1	<b>T-10, 20 &amp;30</b>	Dismantling of Valves from location					
2		Shifting of valves to workshop					
3		Testing/Inspection of valves					
4		Repair of defected valves					
5		Pressure Testing					
6		Painting of Valves with Silver/Aluminium Paint.					
7		Shifting / Installation of valves at location					
8		Inplace cleaning/service & greasing of all manual valves of Dehy. T-10 & 20					
<b>MF4</b>	<b>UTILITIES &amp;</b>	<b>Manual Valves of Utilities &amp; Gathering Area</b>			Valves list attached	<b>24</b>	
1	<b>GATHERING</b>	Dismantling of Valves from location					
2		Shifting of valves to workshop					
3		Testing/Inspection of valves					
4		Repair of defected valves					
5		Pressure Testing					
6		Painting of Valves with Silver/Aluminium Paint.					
7		Shifting / Installation of valves at location					
8		Inplace cleaning/service & greasing of all manual valves of Utilities area					
<b>GROUP-G: MISC. SERVICES:-</b>							
<b>MG1</b>		<b>Misc. Painting Jobs:-</b>	<b>Approx. Dimensions</b>				
1	<b>Gathering</b>	Overhead flare lines from wells	6" dia vertical: 40 ft length 16" x 30" dia horizontal: 300 ft length		PF-PROD. Scope		
2	<b>Gathering</b>	Well#21&31 Gas Feed Lines in Gathering Area	8" dia, 60 ft length		PF-PROD. Scope		
3	<b>10/20C100</b>	Dehy T-10/20 Flare Line from Glycol Contactor to Flare Header	2" dia, 80 ft length				
5	<b>10V102</b>	Glycol Scrubber to flare header line	8" dia, 40 ft length				
6	<b>H2S T-10</b>	Flare header above pipe rack between XHE and Contactor	26" dia, single location only (3ft)				

7	<b>H2S T-20</b>	Flare header to Incinerator Jump over line above T-20 X-HE	6" dia, 20ft length				
8	<b>10/20-V-101</b>	Amine Overhead to Flare line	10" dia, 20ft (patches)				
9	<b>V-903/904</b>	Plant Fuel Gas skid to flare header lines	16" & 24" dia, 30 ft				
10	<b>V-903/904</b>	Plant Fuel Gas skid auxiliary lines	8" & 2" dia, 50 ft cumulative length				
11	<b>TFG to V-903/904</b>	Painting of condensate return line from EGT's Fuel Gas Double Barrel Separator to pipe rack	2" dia. 70ft length				
12	<b>SGL-UCH1</b>	Sale Gas line from metering skid till inlet station	18" dia, 1000ft length				
13	<b>AMIPUR T-10 &amp; 20</b>	Amipur all associated piping	1", 1½" & 2" dia lines cumulative length 100ft				
14	<b>10/20 -V-203</b>	Reboiler Condensate Pot level troll painting & patches piping (TBC dia)	3" dia, 5 ft length				
15	<b>20-S-201</b>	Amine charcoal filter Lean Amine piping	4" dia, 15 ft length				
16	<b>D-T-10,20&amp;30</b>	Structure Painting of Dehy T-10, 20 & 30.	2500 ft³				
17	<b>20C200</b>	Flare line from top of stripper to Flare header	8" dia, 100ft length				
18	<b>10/20C100</b>	Amine Inlet Line to Contactor with by pass spool	12" dia, 20ft length				
19	<b>10/20V202</b>	Flare Line from Reflux Drum to Flare Header	12" dia, 50ft length				
20	<b>10/20V200</b>	Flare Line from Amine Flash drum to Flare header & Acid gas line to incinerator header	20" dia, 20 ft length & 4" dia, 40 ft length				
21	<b>10/20V201</b>	Amine Line from Surge drum to Cartridge filter	4" dia, 70 ft length				
22	<b>90X903</b>	Acid Gases header on pipe rack starting from T-20 and down-coming section till Incinerator K.O vessel	18" dia, 90 ft cumulative length				
23	<b>20E100</b>	Inlet Gas Cooler/Heater cooling water by pass line	8" dia, 30ft length				
24	<b>10E202</b>	Amine Reflux Condenser cooling water inlet/outlet lines	16" dia, 30ft length				
25	<b>10/20 E 203</b>	Solution Cooler Amine outlet lines (Patches)	12" dia, 10 ft length				
26	<b>10P201A/B</b>	ACP Discharge Line (Patches)	12" dia, 20 ft length				
27	<b>10/20P200A/B</b>	ABP Discharge Line to Amine Solution cooler	12" dia, 60 ft length				
28	<b>10/20P202 A/B</b>	ARP Suction & Discharge lines	3" dia, 55ft length cumulative length				
29	<b>90P900 A/B/C</b>	Cooling water pumps discharge lines (03 Nos.) + header (01 No.)	24" dia discharge 10ft, 30" dia 100 ft length				
30	<b>LP-3</b>	Fuel Gas Supply Line from Header to Boiler on rack in front of LP-3	36" dia, 50ft length				

31	HP - LP Condensate Lines	Painting of complete HP and LP condensate return header from boiler area upto dehy trains and upto inlet gas cooler / heaters	4" dia & 8" dia, 1200 ft respectively				
<b>MG2</b>	<b>NDT Access Arrangement &amp; Surface Preparation:-</b>		<b>Approx. Dim.</b>				
1		Thickness monitoring of steam supply header, return condensate header and associated branch connection lines from/to equipment/boilers.	8" dia, 4" dia and other branch connections (Condensate lines) 20" dia, 6" dia and other branch connections (Steam lines)				
2	<b>Flare Header</b>	Thickness monitoring of Flare Header (from Gathering till flare stack)	16" dia, 30" dia & 26" dia, 2669 ft				
3	<b>10/20E100</b>	Thickness monitoring of Inlet Gas Cooler/Heater Steam/Condensate Lines	6" & 2" dia, 20 ft				
6	<b>TFG to V-903/904</b>	Thickness monitoring of Condensate return line 2" from EGT's Double barrel to LP separators	2" dia, 2500 ft				
7	<b>90V100A/B</b>	Thickness monitoring of 6" dia. Sales gas to flare line jump over near Flare K/O	6" dia, 5 ft				
<b>MG3</b>		<b>Insulation Jobs:-</b>	<b>Approx. Dimensions</b>				
1	<b>90X902C</b>	Insulation repair of HP-1 Boiler steam drum (East & West ends especially)	2 nos. x 4'x6' = 48 ft <sup>2</sup> area				
2	<b>90X902E</b>	HP-2 Feedwater line insulation repair	4", 2" & 1" dia, 6 ft length				
3	<b>10E200A/B</b>	Lean Amine lines insulation removal and painting	12" dia, 50ft length				
4	<b>UCH-II SGT-I, II &amp; III</b>	Installation of Insulation at Fuel Gas Skid PCVs (1" dia) & its control tubing (1/2" dia)	1/2" tube dia, 30 ft length				
5	HP - LP Condensate Lines	Insulation removal of complete HP and LP condensate return header from boiler area upto dehy trains	8" dia & 4" dia, 2400 ft length respectively				
6	<b>20E100</b>	T-20 inlet cooler associated steam piping insulation repair (02 no. of locations)	6" dia, 5 ft length				

# UCH-I GAS PROCESSING PLANT - ATA 2020 (VALVE LIST)

S.#	EQUIP. NAME	EQ.TAG.NO	DESCRIPTION/LOCATION	VALVE SPECS	TYPE/SIZE/RATING	QTY	Unit Rate
<b>GATHERING AREA VALVES:-</b>							
	LP SEPERATOR	V-100	UPSTREAM ISOLATING VALVE OF PSV	B2BFR	Ball Valve (Flanged), 4"x300lb	1	
		V-101	UPSTREAM ISOLATING VALVE OF PSV	B2BFR	Ball Valve (Flanged), 4"x300lb	1	
						2	
<b>H2S TRAIN-10 VALVES:-</b>							
1	INLET COOLER/HEATER	10-E-100	BYPASS OF BATTERY LIMIT VALVE	D4RRS	Globe Valve(Flanged), 2"x600lb	1	
2		10-E-100	COOLING WATER SUPPLY & RETURN VALVE	A1RRC	Gate Valve(Flanged), 8"x150lb	2	
	INLET SEPERATOR	10-V-100	ISOLATING VALVES OF PW & H/C LEVEL TROLLS	D1RRC	Gate Valve(Flanged), 3"x600lb	4	
		10-V-100	ISOLATING VALVE OF LCV-104	D1RRC	Gate Valve(Flanged), 2"x600lb	1	
4	AMINE CONTACTOR	10-C-100	UP STREAM GAS LINE NRV	D5RWS	Check Valve(Wafer), 12"x600lb	1	
5		10-C-100	AMINE INLET LINE NRV	D5RWS	Check Valve(Wafer), 10"x600lb	1	
6	OVERHEAD SCRUBBER	10-V-101	TEATED GAS OUTLET BY-PASS VALVE	D4RRD	Globe Valve(Flanged), 2"x600lb	1	
	FILTER COALESCER	10-S-202	PRODUCED WATER COMMON ISOLATION VALVE	F2RRC	Ball Valve (Flanged), 2"x1500lb	1	
9	X-HEAT EXCHANGER	10-E-200	LEAN AMINE ISOLATING VALVES	A1RRC	Gate Valve(Flanged), 12"x150lb	4	
		10-E-200	RICH AMINE ISOLATING VALVES	A1RRC	Gate Valve(Flanged), 10"x150lb	4	
10	AMINE STRIPPER	10-C-200	STRIPPING STEAM LINE NRV	A5RWC	Check Valve(Wafer), 2"x150lb	1	
11		10-C-200	REFLUX LINE NRV	A5RWS	Check Valve(Wafer), 3"x150lb	1	
12		10-C-200	ISOLATING VALVES OF LV-1250.	A1RRC	Gate Valve(Flanged), 10"x150lb	1	
13		10-C-200	ISOLATING VALVES OF TCV-1254	A1RRC	Gate Valve(Flanged), 10"x150lb	1	
14	REBOILER CONDENSATE POT	10-V-203	ISOLATING & BYPASS VALVES OF LCV-9314.	A1RRC	Gate Valve(Flanged), 4"x150lb	3	
17	AMINE BOOSTER PUMP	10-P-200	DISCHARGE NRV'S	A5RWC	Check Valve(Wafer), 12"x150lb	2	
		10-P-200	SUCTION VALVES	A1RRC	Gate Valve(Flanged), 14"x150lb	2	
18	CARTRIDGE FILTER	10-S-200	INLET VALVE OF CARTRIDGE FILTERS	A1RRC	Gate Valve(Flanged), 4"x150lb	1	
19		10-S-200	OUTLET VALVE OF CARTRIDGE FILTERS	A1RRC	Gate Valve(Flanged), 4"x150lb	1	
21	AMINE CIRCULATION PUMP	10-P-201	DISCHARGE NRV'S	D5RWC	Check Valve(Wafer), 12"x600lb	2	
						35	
<b>H2S-TRAIN-20 VALVES:-</b>							
23	INLET COOLER/HEATER	20-E-100	BYPASS OF BATTERY LIMIT VALVE	D4RRS	Globe Valve(Flanged), 2"x600lb	1	
24		20-E-100	COOLING WATER	A1RRC	Gate Valve(Flanged),	2	

			SUPPLY & RETURN VALVE		8"x150lb		
	<b>INLET SEPERATOR</b>	20-V-100	ISOLATING VALVES OF P/W & H/C LEVEL TROLLS	D1RRC	Gate Valve(Flanged), 3"x600lb	<b>4</b>	
		20-V-100	ISOLATING VALVE OF LCV-104	D1RRC	Gate Valve(Flanged), 2"x600lb	<b>1</b>	
25	<b>FILTER COALESCER</b>	20-S-202	PRODUCED WATER COMMON ISOLATION VALVE	F2RRC	Ball Valve (Flanged), 2"x1500	<b>1</b>	
26	<b>OVERHEAD SCRUBBER</b>	20-V-101	TEATED GAS OUTLET BY-PASS VALVE	D4RRD	Globe Valve(Flanged), 2"x600lb	<b>1</b>	
29	<b>AMINE CONTACTOR</b>	20-C-100	UP STREAM GAS LINE NRV	D5RWS	Check Valve(Wafer), 12"x600lb	<b>1</b>	
30		20-C-100	AMINE INLET LINE NRV	D5RWS	Check Valve(Wafer), 10"x600lb	<b>1</b>	
32	<b>X-HEAT EXCHANGER</b>	20-E-200	LEAN AMINE ISOLATING VALVES	A1RRC	Gate Valve(Flanged), 12"x150lb	<b>4</b>	
		20-E-200	RICH AMINE ISOLATING VALVES	A1RRC	Gate Valve(Flanged), 10"x150lb	<b>4</b>	
33	<b>AMINE STRIPPER</b>	20-C-200	STRIPPING STEAM LINE NRV	A5RWC	Check Valve(Wafer), 2"x150lb	<b>1</b>	
34		20-C-200	REFLUX LINE NRV	A5RWS	Check Valve(Wafer), 3"x150lb	<b>1</b>	
35		20-C-200	ISOLATING VALVES OF LV-2250	A1RRC	Gate Valve(Flanged), 10"x150lb	<b>1</b>	
36		20-C-200	ISOLATING VALVES OF TCV-2254	A1RRC	Gate Valve(Flanged), 10"x150lb	<b>1</b>	
40	<b>AMINE BOOSTER PUMP</b>	20-P-200	DISCHARGE NRV'S	A5RWC	Check Valve(Wafer), 12"x150lb	<b>2</b>	
		20-P-200	SUCTION VALVES	A1RRC	Gate Valve(Flanged), 14"x150lb	<b>2</b>	
42	<b>REBOILER CONDENSATE POT</b>	20-V-203	ISOLATION & BYPASS VALVES OF LCV-9514	A1RRC	Gate Valve(Flanged), 4"x150lb	<b>3</b>	
44	<b>AMINE CIRCULATION PUMP</b>	20-P-201	DISCHARGE NRV'S	D5RWC	Check Valve(Wafer), 12"x600lb	<b>2</b>	
45	<b>CARTRIDGE FILTER</b>	20-S-200	INLET VALVE OF CARTRIDGE FILTERS	A1RRC	Gate Valve(Flanged), 4"x150lb	<b>1</b>	
46		20-S-200	OUTLET VALVE OF CARTRIDGE FILTERS	A1RRC	Gate Valve(Flanged), 4"x150lb	<b>1</b>	
						<b>35</b>	

#### DEHYDRATION-TRAIN-10 VALVES:-

47	<b>GLYCOL CONTACTOR</b>	10-C-100	NRV ON TEG LINE IN 10-C-100	D5RWS	Check Valve(Wafer), 3"x600lb	<b>1</b>	
48	<b>INTEGRAL SCRUBBER</b>	10-V-101	BY PASS VALVE INLET GAS LINE	D4RRC	Globe Valve(Flanged), 2"x600lb	<b>1</b>	
49	<b>GLYCOL SCRUBBER</b>	10-V-102	GAS OUTLET BYPASS VALVE AFTER ESD.	D4RRN	Globe Valve(Flanged), 2"x600lb	<b>1</b>	
52	<b>GLYCOL CIRCULATION PUMP</b>	10-P-200	SUCTION VALVES	D1RRC	Gate Valve(Flanged), 4"x600lb	<b>2</b>	
53		10-P-200	DISCHARGE VALVES	D1RRC	Gate Valve(Flanged), 3"x600lb	<b>2</b>	
54		10-P-200	RECYCLE VALVE	D4RRC	Globe Valve(Flanged), 3"x600lb	<b>2</b>	
55	<b>GLYCOL REBOILER</b>	10-E-201	ISOLATING VALVES OF TCV-200 (STEAM INLET)	B1RRC	Gate Valve(Flanged), 4"x300lb	<b>2</b>	
		10-E-201	ISOLATING VALVES OF STEAM TRAP	B1RRC	Gate Valve(Flanged), 3"x300lb	<b>2</b>	
						<b>13</b>	

#### DEHYDRATION-TRAIN-20 VALVES:-

57	<b>GLYCOL CONTACTOR</b>	20-C-100	NRV ON TEG LINE IN 20-C-100	D5RWS	Check Valve(Wafer), 3"x600lb	1
58	<b>INTEGRAL SCRUBBER</b>	20-V-101	BY PASS VALVE INLET GAS LINE	D4RRC	Globe Valve(Flanged), 2"x600lb	1
59	<b>GLYCOL SCRUBBER</b>	20-V-102	GAS OUTLET BYPASS VALVE AFTER ESD.	D4RRN	Globe Valve(Flanged), 2"x600lb	1
60	<b>GLYCOL CIRCULATION PUMP</b>	20-P-200	SUCTION VALVES	D1RRC	Gate Valve(Flanged), 4"x600lb	2
61		20-P-200	DISCHARGE VALVES	D1RRC	Gate Valve(Flanged), 3"x600lb	2
62		20-P-200	RECYCLE VALVE	D4RRC	Globe Valve(Flanged), 3"x600lb	2
63	<b>GLYCOL REBOILER</b>	20-E-201	ISOLATING VALVES OF TCV-200 (STEAM INLET)	B1RRC	Gate Valve(Flanged), 4"x300lb	2
		20-E-201	ISOLATING VALVES OF STEAM TRAP	B1RRC	Gate Valve(Flanged), 3"x300lb	2
						13

#### DEHYDRATION-TRAIN-30 VALVES:-

57	<b>SURGE DRUM</b>	30-V-200	DOWNSTREAM ISOLATING VALVE OF PSV	A1RRC	Gate Valve (Flanged), 6"x150lb	1
						1

#### UTILITIES/BOILER VALVES:-

65	<b>FUEL GAS LINE</b>		NRV FUEL GAS LINE ON FUEL GAS SKID	D5RWS	Check Valve(Wafer), 8"X600	1
68	<b>COOLING TOWER</b>	90-X-903	HOT WATER DISTRIBUTION VALVES	A9XXC	Angle Valve(Flanged), 16"x150lb	8
69		90-X-903	ISOLATION VALVE OF LCV 9801	A1RRC	Gate Valve(Flanged), 8"x150lb	2
65	<b>HP BOILER-2</b>	90-X-902E	GAS SUPPLY ISOLATING VALVE	A7RRC	Butterfly Valve (Wafer), DIN125, PN16	1
66			OPEN VENT HEADER VALVE	A1RRC	Gate Valve(Flanged), 8"x150lb	1
67	<b>LP-3 BFW Pumps</b>	LP-3 BFW	SUCTION VALVES	A1RRC	Gate Valve(Flanged), 8"x150lb	2
68		LP-3 BFW	DISCHARGE VALVES	A1RRC	Gate Valve(Flanged), 4"x150lb	2
69		LP-3 BFW	DISCHARGE LINE NRV's	A5RWC	Check Valve(Wafer), 4"x150lb	2
70	<b>BRINE TANK</b>		BRINE TANK MAKE UP LINE VALVE	A1RRC	Gate Valve(Flanged), 6"x150lb	1
71	<b>BACK WASH PUMP</b>	90-P-910B	DISCHARGE VALVE OF PUMP-B	A7RRC	Butterfly Valve (Wafer), 6"x150lb	1
72	<b>EGT</b>	Cold Flare	ISOLATION VALVE OF COLD FLARE	A1RRC	Gate Valve (Flanged) 8x150lb	1

22

GATHERING AREA	2
AMINE TRAIN-10	35
AMINE TRAIN-20	35
DEHY TRAIN-10	13
DEHY TRAIN-20	13
DEHY TRAIN-30	1
UTILITY	22
<b>TOTAL VALVES</b>	<b>121</b>

# OIL & GAS DEVELOPMENT COMPANY LIMITED

## UCH GAS PROCESSING PLANT - ATA 2020 (ELECTRICAL SCOPE OF WORK)

Act #	Tag #.	Job Description	Specifications	Tools Required	Remarks	Quantity	Unit Rate
<b>SWITCHGEAR ROOM:</b>					<b>Location</b>		
1	10-P-200A	<b>LV(380V) Modules</b> Inspection, Servicing, Cleaning, Testing of Contactors, Thermal Relays, Aux. Contactors, Power Points & tightening of all connections.	Amine Booster P.M. Modules, 380v, 138A, 100hp		<b>LV &amp; EGTs MCC Modules</b>	1	
2	10-P-200B					1	
3	20-P-200A		Amine Booster P. M. Modules, 380v, 138A, 100hp			1	
4	20-P-200B					1	
5	10-P-202A		Amine S. Reflux P.M. Modules, 380v, 15.5A, 10hp			1	
6	10-P-202B					1	
7	20-P-202A		Amine S. Reflux P. Motor, 380v, 15.5A, 10hp			1	
8	20-P-202B					1	
9	90-X-903A		Cooling Tower Fan Motor , 380v, 210A, 150hp			1	
10	90-X-903B					1	
11	90-X-903C					1	
12	90-X-903D					1	
13	90-P-911A		Raw Water P. Motor 380v, 138A, 100hp			1	
14	90-P-911B					1	
15	90-P-911C					1	
16	90-P-902A		L.P Boiler Feed Water P. Motor 380v, 66.4A, 50hp			1	
17	90-P-902B					1	
18	Siemens Pond 1		Siemens Pond water motor modules, 380 V, 40 HP			1	
19	Siemens Pond 2					1	
20	Siemens Pond 3					1	
21	HP-1		H.P Boiler Air Blower Motor 380v, 4.5A, 2.2kw			1	
22	HP-2		H.P Boiler Air Blower Motor 380v, 22A, 15kw			1	
23	90-X-904A		Incinerator F.D Fan Motor , 380v, 22A, 15kw			1	
24	90-X-904B					1	
25	1A		ABLOC Fan Motor 380v, 25.8A, 9.5 Kw			1	
26	2A					1	
27	3A					1	
28	4A					1	
29	1A		Enclosure Vent Fan Motor 380v, 55A, 30kw			1	
30	2A					1	
31	3A					1	
32	4A					1	
33	1A		Gen: CACA Fan Motor 380v. 8.7A,			1	
34	1B					1	



35	2A		4kw			1		
36	2B					1		
37	3A					1		
38	3B					1		
39	4A					1		
40	4B					1		
41	1A					1		
42	2A		VGW Motor 380v, 3.6A, 1.5kw			1		
43	3A					1		
44	4A					1		
45	LT Bus	<b>LV(380V) Bus Bar</b> Inspection, Cleaning and Tightening of Bus Bars	LT Bus Bar 176,181		<b>LV Bus Bar</b>	1		
46	10-P-201A	<b>MV(6.6KV) Modules</b>  Inspection, Servicing, Cleaning, Testing of Contactors, Thermal Relays, Aux. Contactors, Power Points, & Tightening of all connections.	Amine Circulation P. Motor, 6.6kv, 117A, 1500hp		<b>MV Modules</b>	1		
47	10-P-201B						1	
48	20-P-201A			Amine Circulation P. Motor 20-P-201, 6.6 Kv, 117A, 1500hp			1	
49	20-P-201B						1	
50	90-P-900A			Cooling Water Circulation P. Motor,6.6kv, 67A, 700hp			1	
51	90-P-900B						1	
52	90-P-900C			L. P. Boiler F. D. Fan Motor, 6.6kv, 20A, 250hp			1	
53	90-X-902A						1	
54	90-X-902B			Main Incoming Vacuum Circuit Breaker 52 A/B/Tie, 8.25kv, 1200A			1	
55	52-A						1	
56	52-B						1	
57	52-T				1			
58	Trafo 1 & 2		Vacuum Circuit Breaker of Transformer 1 & 2, 2500 KVA, 6.6KV		2			
59	MV Bus	<b>MV(6.6KV) Bus Bar</b> Inspection, Cleaning, and Tightening of Bus Bars	MV Bus Bar		<b>MV Bus Bar</b>	1		
60	1	<b>Battery Charger and Battery Bank</b> Inspection, Cleaning, Checking And Tightening of connections, Chargers & Battery Cabinets. Batteries Inspection, load testing, tightening, greasing of connections & Servicing.Replacement of bank if required after inspection.	Battery Chargers and Battery Banks Of EGTs		<b>Battery Room</b>	1		
61	2					1		
62	3					1		
63	4					1		
64	1	Inspection, Tightening of connections, Preventive maintenance on by pass mode and general	30 KVA UPS		<b>UPS</b>	1		
65	1		30 KVA UPS (Stand by)			1		

		cleaning.					
66	X-200A	<b>LV(380V) Modules</b> Inspection, Servicing, Cleaning, Testing of Contactors, Thermal Relays, Aux. Contactors, Power Points, Tightening of all connections.	Inst. Air Comp. Main Motor (Caps) , 380v, 67A, 50hp	<b>Instrument Air Compressors</b>	1		
67	X-200B				1		
68	X-200C		Quincy Inst. Air Comp. Motor, 380v, 67A, 50hp		1		
69	X-200D				1		
70	X- 201A(181)		Inert Gas Comp. Motor, 380v, 44A, 30hp		1		
71	X- 201B(176)			1			
72	1	<b>EGT Generators</b> Checking of Generators' connections, Exciters, PMGs,Diode Assembly. Inspection and removal of dust and webs. Cleaning & Washing of Generator's outer body.	Main Generator, PMG & Exciter Units.	<b>EGTs</b>	1		
73	2				1		
74	3				1		
75	4				1		
76	LP3- MCC	<b>LV(380V) Modules</b> Inspection, Servicing, Cleaning, Testing of Contactors, Thermal Relays, Aux. Contactors, Power Points, Tightening of all	MCC Panel of LP Boiler 3	<b>LP boiler 3</b>	<b>5</b>		
77		Allied Services for Electric Supply At Different Locations of Plant.	Allied Services	<b>Whole Plant</b>			
78		Cleaning, testing and resistivity measurement of Earth pits	Earth Resistance Measurement		<b>25</b>		
79		Maintenance , cleaning, refurbishment, replacement (if required) of skid(2x36watt) and ploe lights ( 250Watt, 400Watt)	Job on Skid and Pole lights	<b>Amine, Dehydration , EGTs and Utility Systems</b>	<b>100</b>		
80	1 job	<b>LV(380V) Modules</b> Inspection, Cleaning Of Switch Gear, Transformer , DBs, tightening of control and power cables.	LT Switch Gear & Transformer and DBs Installed in Residential Colony	<b>LV Switch Gear, Transformer and DBs</b>	<b>1</b>		
81	1 job		LT Switch Gear having MCCs & Transformer installed at Pat Feeder Water Pumping Station	<b>LV Switch Gear, Transformer and MCCs</b>	<b>1</b>		
82	1 job	Inspection, Servicing, Cleaning, Tightness of DBs Installed in workshops, offices and admin building	Maintenance of DBs	<b>LT DBs</b>	<b>10</b>		
83	1 job	Preventive maintenance job on heater and superheater installed with fuel gas skid of EGTs. Job will include	Inspection of heater and superheater	<b>EGTs fuel Gas Skid</b>	<b>1</b>		

		inspection and replacement if required for bundle of heater and super heater					
84	1 job	Installation of wall mounted LT changeover panel 4 Pole, 1250 Amp. LT power cable 240 mmx2 pair, 4C, 45 feet length, laying from Trafo-1 incomer to changeover panel and LT power cable 240 mmx2 pair, 4C, 55 feet length cable laying from Trafo-2 incomer to changeover panel, termination of these cables at trafo incomers and changeover sides. Removal of LT power cable connections 240 mmx2 pair, 4C from trafo-1 incomer and termination at changeover output, job complete in all respects.	Installation of changerover 1250 Amp, LT cable laying and termination		<b>MCC</b>	<b>1</b>	
<b>H2S REMOVAL PLANT AREA MOTORS</b>					<b>Location</b>		
1	10-P-201A	<b>MV (6.6KV) MOTORS</b> Cleaning of motor and heat exchanger, Meggering Of Windings, Inspection, Tightening Of Connections In JBs, And Earth Testing. Bearings clearance check. Replacement Of Bearings (If Required after Inspection)	Amine Circulation P. Motor, 6.6kv, 117A, 1500hp		<b>Train – 10</b>	<b>1</b>	
2	10-P-201B					<b>1</b>	
3	20-P-201A		Amine Circulation P. Motor, 6.6kv, 117A, 1500hp		<b>Train – 20</b>	<b>1</b>	
4	20-P-201B	<b>1</b>					
5	10-P-200A	<b>LV (380V) MOTORS</b> Cleaning, Greasing & Replacement Of Bearings and Paint Job (If Required), Meggering Of Windings, Inspection, Tightening Of Connections In JBs and Earth Testing	Amine Booster P. Motor, 380v, 138A, 100hp		<b>Train – 10</b>	<b>1</b>	
6	10-P-200B		Amine Booster P. Motor, 380v, 138A, 100hp			<b>1</b>	
7	20-P-200A				Amine S. Reflux P. Motor, 380v, 15.5A, 10hp	<b>Train – 20</b>	<b>1</b>
8	20-P-200B		Amine S. Reflux P. Motor, 380v, 15.5A, 10hp			<b>1</b>	
9	10-P-202A				Amine S. Reflux P. Motor, 380v, 15.5A, 10hp	<b>Train – 10</b>	<b>1</b>
10	10-P-202B		Amine S. Reflux P. Motor, 380v, 15.5A, 10hp			<b>1</b>	
11	20-P-202A				Amine S. Reflux P. Motor, 380v, 15.5A, 10hp	<b>Train – 10</b>	<b>1</b>
12	20-P-202B		<b>1</b>				
<b>UTILITY AREA MOTORS</b>					<b>Location</b>		
13	90-P-900A	<b>MV (6.6KV) MOTORS</b> Cleaning, Greasing ,Meggering Of Windings, Inspection, Tightening Of	Cooling Water Circulation P. Motor, 6.6kv, 67A, 700hp		<b>Cooling Tower</b>	<b>1</b>	
14	90-P-900B					<b>1</b>	

15	90-P-900C	Connections In JBs, Earth Testing and Paint Job. Replacement of Bearings (If Required after Inspection)				1	
16	90-X-903A	<b>LV (380V) MOTORS</b> Cleaning, Greasing & Replacement Of Bearings and Paint Job (If Required), Meggering Of Windings, Inspection, Tightening Of Connections In JBs, And Earth Testing.	Cooling Tower Fan Motor, 380v, 210A, 150hp		<b>Top Of Cooling Tower</b>	1	
17	90-X-903B					1	
18	90-X-903C					1	
19	90-X-903D					1	
<b>UTILITY AREA MOTORS</b>					<b>Location</b>		
20	90-P-901A	<b>LV (380V) MOTORS</b> Cleaning, Greasing & Replacement Of Bearings and Paint Job (If Required), Meggering Of Windings, Inspection, Tightening Of Connections In JBs, And Earth Testing.	Treated Water P. Motor, 380v, 14.5A, 10hp		<b>Blow The De-Rater Tank.</b>	1	
21	90-P-901B					1	
22	90-P-901C		L.P.B. Feed Water P. Motor, 380v, 66.4A, 50hp			1	
23	90-P-902C					1	
24	90-P-902D					1	
25	90-P-903C	<b>LV (380V) MOTORS</b> Cleaning, Greasing & Replacement Of Bearings and Paint Job (If Required), Meggering Of Windings, Inspection, Tightening Of Connections In JBs, And Earth Testing.	H.P.B. Feed Water P. Motor, 380V, 40HP, 53A		<b>Below The De-Rater Tank.</b>	1	
26	90-P-903D		H.P.B. Feed Water P. Motor, 380V, 40HP, 53A			1	
27	90-X-902A	<b>MV (6.6KV) MOTORS</b> Cleaning, Greasing, & Replacement Of Bearings (If Required) Meggering Of Windings, Inspection, Tightening Of Connections In Jbs, And Earth Testing.	F. D. Fan Motor 6.6kv, 20A, 250hp		<b>L.P. Boiler "A" &amp; "B"</b>	1	
28	90-X-902B					1	
29	HP-1	<b>LV (380V) MOTORS</b> Cleaning, Greasing & Replacement Of Bearings (If Required), Meggering Of Windings, Inspection, Tightening Of Connections In Jbs, And Earth Testing.	H.P. Boiler Air Blower Motor 380V, 4.5A, 2.2kw		<b>H.P Boiler</b>	1	
30	HP-1		H.P. Boiler FD Fan Motor 380V, 22A, 15kw			1	
31	HP-2		H.P. Boiler Air Blower Motor 380V, 22A, 15kw			1	
32	90-X-902C	<b>LV (380V) MOTORS</b> Cleaning, Greasing & Replacement Of Bearings (If Required), Meggering Of Windings, Inspection, Tightening Of Connections In Jbs, And Earth Testing.	Boiler Air Blower Motor 400V,271A,160KW,		<b>L.P.3 Boiler</b>	1	

33	L.P.3-A	<b>LT (380V) MOTORS</b> Cleaning, Greasing & Replacement Of Bearings and Paint Job (If Required), Meggering Of Windings, Inspection, Tightening Of Connections In Jbs, And Earth Testing.	L.P.3 B. Feed Water P. Motor 400V, 92.9A, 55KW		<b>L.P.3 Boiler</b>	1	
34	L.P.3-B					1	
<b>POWER GENERATION (TURBINE) AREA MOTORS</b>					<b>Location</b>		
35	1A	<b>LV (380V) MOTORS</b> Cleaning, Greasing & Replacement Of Bearings (If Required), Meggering Of Windings, Inspection, Tightening Of Connections In Jbs, And Earth Testing.	ABLOC Fan Motor 380V, 25.8A, 9.5 Kw		<b>European Gas Turbines</b>	1	
36	2A					1	
37	3A					1	
38	4A					1	
39	1A		Enclosure Vent Fan Motor 380V, 55A, 30kw			1	
40	2A					1	
41	3A					1	
42	4A					1	
43	1A	<b>LV (380V) MOTORS</b> Cleaning, Greasing & Replacement Of Bearings (If Required), Meggering Of Windings, Inspection, Tightening Of Connections In Jbs, And Earth Testing.	Gen: CACA Fan Motor 380V. 8.7A, 4kw		<b>European Gas Turbines</b>	1	
44	1B					1	
45	2A					1	
46	2B					1	
47	3A					1	
48	3B					1	
49	4A		VGV Motor 380V, 3.6A, 1.5kw		<b>European Gas Turbines</b>	1	
50	4B					1	
51	1A					1	
52	2A					1	
53	3A						
54	4A						
<b>INCINERATOR AREA MOTORS</b>					<b>Location</b>		
55	90-X-904A	<b>LV (380V) MOTORS</b> Cleaning, Greasing & Replacement Of Bearings and Paint job (If Required), Meggering Of Windings, Inspection, Tightening Of Connections In Jbs, And Earth Testing.	Incinerator F.D Fan Motor, 380V, 22A, 15kw		<b>Incinerator</b>	1	
56	90-X-904B					1	
<b>AMINE STORAGE TANK AREA MOTORS</b>					<b>Location</b>		
57	90-P-905A	<b>LV (380V) MOTORS</b> Cleaning, Greasing & Replacement Of Bearings (If Required), Meggering Of Windings, Inspection, Tightening Of Connections In Jbs, And Earth Testing.	Amine Sump Motor 380V, 6A, 4kw		<b>Amine Storage Tank Area</b>	1	
<b>RAW WATER PUMP AREA MOTORS</b>					<b>Location</b>		
58	90-P-911A	<b>LV (380V) MOTORS</b> Cleaning, Greasing & Replacement Of Bearings and Paint Job	Raw Water P. Motor 380V, 138A, 100hp		<b>Pond Water Area</b>	1	
59	90-P-911B					1	

60	90-P-911C	(If Required), Meggering Of Windings, Inspection, Tightening Of Connections In Jbs, And Earth Testing.					<b>1</b>	
<b>COMPRESSOR AREA MOTORS</b>					<b>Location</b>			
61	X-200A	<b>LV (380V) MOTORS</b> Cleaning, Greasing & Replacement Of Bearings (If Required), Meggering Of Windings, Inspection, Tightening Of Connections In Jbs, And Earth Testing.	Inst. Air Comp. Main Motor (Caps), 380V, 67A, 50HP		<b>Compressor Area</b>		<b>1</b>	
62	X-200B					<b>1</b>		
63	X-200A					<b>1</b>		
64	X-200B					<b>1</b>		
65	X-200C					<b>1</b>		
66	X-200D					<b>1</b>		
67	X- 201A(181)					<b>1</b>		
68	X- 201B(176)					<b>1</b>		
<b>CONDENSATE LOADING AREA MOTORS</b>					<b>Location</b>			
69	P-110A	<b>LV (380V) MOTORS</b> Cleaning, Greasing & Replacement Of Bearings and Paint Job (If Required), Meggering Of Windings, Inspection, Tightening Of Connections In Jbs, And Earth Testing.	Condensate loading pump motor A 380V,53.5 Amp, 40HP		<b>Condensate Loading Area</b>		1	
70	P-110b		Condensate loading pump motor B 380V,53.5 Amp, 40HP			1		
71			Water drainage pump motor 380V,26.75 Amp, 20HP			1		
72			Bowser decanting pump motor 380V,22 Amp, 15HP			1		
<b>FIRE WATER STORAGE TANK AREA MOTORS</b>					<b>Location</b>			
73	160-P- 101A	<b>LV (380V) MOTORS</b> Cleaning, Greasing & Replacement Of Bearings (If Required), Meggering Of Windings, Inspection, Tightening Of Connections In JBs, And Earth Testing	Fire Water P. Motor (Jockey) , 380V, 21.2A, 15hp		<b>Fire Water Storage Tank</b>		<b>1</b>	
74	160-P- 101B					<b>1</b>		
75	10-P- 200A	<b>LV (380V) MOTORS</b> Cleaning, Greasing & Replacement Of Bearings and Paint Job (If Required), Meggering Of Windings, Inspection, Tightening Of Connections In JBs, And Earth Testing Replacement of Bearings if Required	Glycol Circulation P. Motor 25kw, 380V, 52amps		<b>Train-10</b>		<b>1</b>	
76	10-P- 200B					<b>1</b>		
77	20-P- 200A		Glycol Circulation P. Motor, 25KW, 380V, 52Amps		<b>Train-20</b>		<b>1</b>	
78	20-P- 200B					<b>1</b>		
79	GSP A		Glycol Sump P. Motor 380V, 6A, 4kw		<b>Dehydration Area</b>		<b>1</b>	

80	170-P-101A	<b>LV (380V) MOTORS</b> Cleaning, Greasing & Replacement Of Bearings and Paint Job (If Required), Meggering Of Windings, Inspection, Tightening Of Connections In JB's, And Earth Testing	ETP Sump P. Motor 380V, 15kw		<b>ETP Area</b>	1	
81	170-P-101B					1	

**OIL AND GAS DEVELOPMENT COMPANY LIMITED**  
**T&I- Section (PE&FD), Production Department**  
**ATA-2020 - UCH-I**

**1. Gathering**

**Area:-**

Sr. No.	Location	Tag No.	Instruments Type /Make	Job Description	Tools/Equps. Required	Remarks	Quantity	Unit Rate	
1	Western & Central Lobe	PRV_20 01A PRV_20 01B	Control Valves 16" / Fisher	<ul style="list-style-type: none"> <li>Greasing &amp; Cleaning of PRVs and rectify open close indications if required</li> </ul>	All tools, consumables, calibration equipments at contractor's end 1-Multi-meter 2-Engineering Station 3-Hart Communicator 4-Spanners Set (In/mm) 5-Screw Drivers Set 6-Resistance Box. 7-Pressure Calibrator 8-mA Source 9-Heavy Machinery (if reqd.).	1. OGDCL will deduct from actual cost if any job is not possible to be carried out. 2. OGDCL will deduct in case of non-availability of tools and calibration equipments. 3. mA Source and pressure calibrator at Contractor end 4. All the procedure as per manual will be provided by OGDCL that must be followed. 5. Site test with SCADA left as per process requirement	2		
		ESDV_2 001A ESDV_2 001B		<ul style="list-style-type: none"> <li>Greasing &amp; Cleaning of ESDVs and rectify open close indications if required</li> </ul>					2
		FCV_20 01A FCV_20 01B		<ul style="list-style-type: none"> <li>Onsite Testing, Calibration, integrity checks of actuator , positioner , I/P converter and service verified by CCR HMI</li> <li>Rectify Feedback transmitting signals</li> <li>Rectify faulty indications of all instruments / valves etc (if required)</li> </ul>					
2	Eastern Lobe	FCV_20 01C FCV_20 01D FCV_20 01F FCV_20 01E	Control Valves 8" / Fisher	<ul style="list-style-type: none"> <li>Onsite Testing, Calibration, integrity checks of actuator , positioner , I/P converter and service verified by CCR HMI</li> <li>Rectify Feedback transmitting signals Open/ Close of FCV &amp; etc</li> <li>Rectify faulty indications of all instruments / valves etc (if required)</li> </ul>			4		



		ESDV_2 001C ESDV_2 001D ESDV_2 001F	<ul style="list-style-type: none"> <li>• Dismantling of Actuator , shifting to W/S, replacement of Gasket &amp; O Rings and maintenance etc.</li> <li>• Onsite Testing &amp; Rectification of PRVS Opening / Closing indications(Limit Switch) through CCR HMI Display</li> <li>• Greasing &amp; Cleaning of PRVs</li> </ul>				<b>3</b>	
		PRV_20 01D PRV_20 01F PRV_20 01E	<ul style="list-style-type: none"> <li>• Dismantling of Actuator , shifting to W/S, replacement of Gasket &amp; O Rings and maintenance etc.</li> <li>• Onsite Testing &amp; Rectification of PRVS Opening / Closing indications(Limit Switch) through CCR HMI Display</li> <li>• Greasing &amp; Cleaning of PRVs</li> </ul>				<b>3</b>	

**2 Well**  
**Site:-**

Sr. No	Location	Tag No.	Instruments Type /Make	Job Description	Tools/Equps. Required	Remarks	Quantity	Unit Rate
1	Eastern Lobe	FCV_07	Flow Control Valve , Size 4" / Mokveld	<ul style="list-style-type: none"> <li>• Onsite Testing, Calibration, integrity checks of actuator , positioner , I/P converter and service verified by CCR HMI</li> <li>• Rectify Feedback transmitting signals Open/ Close of FCV &amp; etc</li> <li>• Rectify faulty indications of all instruments / valves etc (if required)</li> </ul>	All tools, consumables, calibration equipments at contractor's end 1-Multi-meter 2-Engineering assistance software 3-Hart Communicator 4-Spanners Set (In/mm) 5-Screw Drivers Set 6-Resistance Box. 7-Pressure	1. OGDCL will deduct from actual cost if any job is not possible to be carried out. 2. OGDCL will deduct in case of non-availability of tools and calibration equipments.	<b>4</b>	
2		FCV_08						
3		FCV_09						
4		FCV_06 B						
5		ESDV_07	TK valve , Emergency Shutdown Valve Size 4"	<ul style="list-style-type: none"> <li>• Dismantling of Actuator , shifting to W/S, replacement of Gasket &amp; O Rings</li> </ul>		3. mA Source and pressure	<b>4</b>	
6		ESDVV_08						

7		ESDV_09	Actuator: Keystone Morin	and maintenance etc. • Actuator integrity testing and calibration, • Onsite Testing & Rectification of PRVS Opening / Closing indications(Limit Switch) through CCR HMI Display • Greasing & Cleaning of the valve body	Calibrator 8-mA Source 9-Heavy Machinery (if reqd.).	calibrator at Contractor end 4. All the procedure as per manual will be provided by OGDCL that must be followed. 5. Site test with SCADA left as per process requirement		
8		ESDV_06B						
13	Central Lobe	FCV_03	Flow Control Valve , Size 4" / Mokveld	• Onsite Testing, Calibration, integrity checks of actuator , positioner , I/P converter and service verified by CCR HMI • Rectify Feedback transmitting signals Open/ Close of FCV & etc • Rectify faulty indications of all instruments / valves etc (if required)			5	
14		FCV_17						
15		FCV_18						
16		FCV_11						
17		FCV_14						
18		ESDV_03						
19	ESDV_17							
20	ESDV_18							
21	ESDV_11							
22	ESDV_14							
22	ESDV_14							
28	Western Lobe	FCV_12	Flow Control Valve , Size 4" / Mokveld	• Onsite Testing, Calibration, integrity checks of actuator , positioner , I/P converter and service verified by CCR HMI			6	
29		FCV_13						
30		FCV_15						
31		FCV_16						
32		FCV_02						

33		FCV_10		<ul style="list-style-type: none"> <li>• Rectify Feedback transmitting signals Open/ Close of FCV &amp; etc</li> <li>• Rectify faulty indications of all instruments / valves etc (if required)</li> </ul>				
34		ESDV_12	TK valve , Emergency Shutdown Valve Size 4" Actuator: Keystone Morin	<ul style="list-style-type: none"> <li>• Dismantling of Actuator , shifting to W/S, replacement of Gasket &amp; O Rings and maintenance etc.</li> <li>• Actuator integrity testing and calibration,</li> <li>• Onsite Testing &amp; Rectification of PRVS Opening / Closing indications(Limit Switch) through CCR HMI Display</li> <li>• Greasing &amp; Cleaning of the valve body</li> </ul>			<b>6</b>	
35		ESDV_13						
36		ESDV_15						
37		ESDV_16						
38		ESDV_02						
39		ESDV_10						

## **2 LP Separators (V-100 & V-101):-**

Sr. No	Location	Tag No.	Instruments Type /Make	Job Description	Tools/Equps. Required	Remarks	Quantity	Unit Rate
1	LP Separator	LT -3201 LT-3210 LT-3250 LT-3260 LCV-3210 LCV-3250	LT	<ul style="list-style-type: none"> <li>• V-100 &amp; V-101 (LCVs, PSVs, PCVs ) Inspection, calibration and maintenance will be carried out and verification of controlling will be executed by CCR-HMI [operator command].</li> </ul>	<ul style="list-style-type: none"> <li>• All tools, calibration equipments at contractor's end</li> <li>Spanners Set (In/mm)</li> <li>• Screw Drivers Set</li> <li>• Hex Key set.</li> <li>• Multi-meter</li> <li>• Pipe Wrench set</li> <li>• Engineering assistance software</li> <li>• Hart Communicator</li> </ul>	1. OGDCL will deduct from actual cost if any job is not possible to be carried out. 2. OGDCL will deduct in case of non-availability of tools and calibration equipments. 3. mA Source and	<b>6</b>	
		25-PSV-3205 25-PSV-3255	PSV, Size= 4"/ Anderson Greenwood & Co.				<b>2</b>	
		PCV-3215 PCV-3271	PCV , Size=2" / Fisher				<b>2</b>	

					<ul style="list-style-type: none"> <li>• Spanners Set (In/mm)</li> <li>• Screw Drivers Set</li> <li>• Multi-meter</li> <li>• Resistance Box.</li> <li>• Pressure Calibrator</li> </ul>	pressure calibrator at Contractor end 4. All the procedure as per manual will be provided by OGDCL that must be followed. 5. Site test with SCADA left as per process requirement		
--	--	--	--	--	--	---	--	--

## 2 Slug Catcher:-

Sr. No	Location	Tag No.	Instruments Type /Make	Job Description	Tools/Equps. Required	Remarks	Quantity	Unit Rate
1	Slug Catcher	LT_2025 LT_2020 LCV-2025	LT	Rectify following inspection, calibration and maintenance will be carried out and verification of controlling will be executed by CCR-HMI [operator command]. [Boot calibration & Servicing] [calibration and servicing]	<ul style="list-style-type: none"> <li>• All tools, consumables, calibration equipments at contractor's end</li> <li>Spanners Set (In/mm)</li> <li>• Screw Drivers Set</li> <li>• Hart Communicator &amp; Etc</li> <li>• Spanners Set (In/mm)</li> <li>• Screw Drivers Set</li> <li>• Multi-meter</li> <li>• Resistance Box.</li> <li>• Pressure Calibrator</li> </ul>	1. OGDCL will deduct from actual cost if any job is not possible to be carried out. 2. OGDCL will deduct in case of non-availability of tools and calibration equipments. 3. mA Source and pressure calibrator at Contractor end 4. All the procedure as per manual will be provided by OGDCL that must be followed. 5. Site test	<b>3</b>	
		25-PSV-2015	PSV , Size = 4" / Anderson Greenwood & Co	Calibration, servicing and maintenance will be carried out and verification of reading will be monitored by CCR	<ul style="list-style-type: none"> <li>• Hart Communicator</li> <li>• Spanners Set (In/mm)</li> <li>• Screw Drivers Set</li> <li>• Multi-</li> </ul>		<b>1</b>	

					meter• Resistance Box. • Pressure Calibrator	with SCADA left as per process requirement		
--	--	--	--	--	---	---	--	--

## 5 Condensate Storage Tanks (T-101 & T-102)

Sr. No	Location	Tag No.	Instruments Type /Make	Job Description	Tools/Equps. Required	Remarks	Quantity	Unit Rate
1	UPL Metering Skid	PCV-2257	12-835 A Trim 14" Rating 1450 Psig ABB	Dismantling, shifting to W/S, body & trim inspection, lapping of plug/seat (if reqd.), hydro testing, replacement of kits, actuator integrity testing and calibration, service of pneumatic regulator, I/P converter & positioner. Inspection/testing of SOVs (if required). Loop testing with SCADA	• All tools, consumables, calibration equipments at contractor's end	<ul style="list-style-type: none"> <li>• OGDCL will deduct from actual cost if any job is not possible to be carried out.</li> <li>• OGDCL will deduct in case of non-availability of tools and calibration equipments.</li> <li>• mA Source and pressure calibrator at Contractor end</li> <li>• All the procedure as per manual will be provided by OGDCL that must be followed.</li> <li>• Site test with SCADA left as per process requirement</li> </ul>	<b>1</b>	

**Note:**

Contractor will responsible to provide all mandatory equipments for calibration and maintenance of above mentioned instruments

# OIL & GAS DEVELOPMENT COMPANY LIMITED

## UCH-I GAS PROCESSING PLANT - ATA 2020

### (INSTRUMENT SCOPE OF WORK) (Rev.01)

Act #	Tag #.	Job Description	Specifications	Tools Required	Remarks	Qty	Unit Rate
<b>H2S Removal Plant Train – 10</b>					<b>Location</b>		
1	10-PCV-1280	To record as found calibration data. Site calibration and integrity checks of actuator, positioner, I/P converter. Loop calibration through DCS.	Size: 10" CL 150 Fisher Control Valve	Screw Driver Set, Terminal Screw Drivers, Spanner Set mm/Inch, Multimeter, mA Current Source, HART Communicator, consumables	REFLUX DRUM	1	
2	10-TCV-1112		Size: 4" CL 150 Fisher Control Valve		STEAM TO INLET GAS	1	
3	10-PCV-1106		Size: 6" CL 600 Fisher Control Valve		CONTACTOR OUTLET	1	
4	10-TCV-1254		Size: 8" CL 150 Fisher Control Valve		BYPASS OF STRIP EX.	1	
5	10-PCV-1103		Size: 12" CL 600 AES(ROBOTARM)		MAIN INLET	1	
6	10-LCV-1140		Size: 1" CL 600 Fisher Control Valve		CONTACTOR OUTLET	1	
7	10-LCV-1203		Size: 8" CL 150 Fisher Control Valve		FLASH DRUM O/L TO STRP.	1	
8	10-PCV-1200		Size: 4" CL 150 Fisher Control Valve		FLASH DRUM	1	
9	10-FCV-1133	Dismantling, shifting to W/S, body & trim inspection, lapping of plug/seat (if reqd.), hydro testing, replacement of kits, actuator integrity testing and calibration, service of pneumatic regulator, I/P converter & positioner. Inspection/testing of SOVs (if required). Loop testing with DCS.Replacement of Positioner if required	Size: 6" CL 600 Fisher Control Valve	Valve Lifting and shifting equipment, Screw Driver Set, Terminal Screw Drivers, Spanner Set mm/Inch, Multimeter, mA Current Source, HART Communicator, consumables	CIR PUMP TO CONTACTOR	1	
10	10-LCV-1136		Size: 6" CL 600 Fisher Control Valve		FLASH DRUM O-LET TO STR	1	
11	10-LCV-1276		Size: 2" CL 150 Control Valve Fisher		REFLUX DRUM LEVEL	1	
12	10-LCV-102		Size: 1" CL 600 Fisher Control Valve		P/W INLET GAS SEPARATOR	1	
13	10-LCV-104		Size: 1" CL 600 Fisher Control Valve		HC INLET GAS SEPARATOR	1	
14	10-LCV-9314		Size: 3" CL 150 Fisher Control Valve		STEAM CONDANSATE POT	1	
15	10-FCV-9315		Size: 1- 1/2" CL 150 Fisher Control Valve		STEAM TO STRIPPER	1	
16	10-PCV-1217		Size: 2" Regulator, Make: Fisher		Surge Drum	1	
17	10-PCV-1218		Size: 2" Regulator, Make: Fisher		BLANKETING REGULATOR	1	
18	10-SDV-101	Greasing, testing of loop & on/off position, verification of position switches, service of all local pneumatic regulators, loop testing,	Size: 1" CL 600 EL-O-MATIC	Grease Gun, all necessary tools for the job	INLET GAS SEPT	1	
19	10-SDV-102		Size: 1" CL 600 EL-O-MATIC		INLET GAS SEPT	1	

		testing/overhauling of SOVs.						
20	10-XSV-1101	Greasing, testing of loop & on/off position, verification of position switches, service of all local pneumatic regulators, loop testing, testing/overhauling of SOVs.	SIZE:12" CL 600 Rotork	Screw Driver Set, Terminal Screw Drivers, Spanner Set mm/Inch, Multimeter, mA Current Source, Resistance box, Pressure Calibrators Low Pressure and High Pressure Ranges.HART Communicator, consumables.	TREATED GAS OUTLET	1		
21	10-XSV-1102		SIZE:12" CL 600 Rotork		FEED GAS INLET	1		
22	10-XSV-1144		SIZE:10" CL 600 Rotork		AMINE CONTACTOR O/L	1		
23	10-PT-1103	Onsite pressure calibration, leak test of connectors, checking of isolating valves, loop verification.	Pressure Transmitter Rosemount		MAIN INLET	1		
24	10-PT-1106				FLARE INLET	1		
25	10-FT-1133	Dismantling, shifting to W/S, Record as fond calibration data, Sensor and cleaning, Calibration, re-installation, leak test of connectors, checking of isolating valves, choking removal, loop verification.	Flow Transmitter Rosemount		CIR PUMP TO CONT	1		
26	10-FT-1269				REF PMP TO STRPP	1		
27	10-FT-1107	Onsite calibration, leak test of connectors, checking of isolating valves, loop verification.	Flow Transmitter Rosemount		MAIN GAS INLET	1		
28	10-FT-9311	Dismantling, shifting to W/S, Record as fond calibration data, Sensor and cleaning, Calibration, re-installation, leak test of connectors, checking of isolating valves, loop verification.	Flow Transmitter Rosemount		STEAM TO REBOILER	1		
29	10-FT-9315				STEAM TO STRIPPER	1		
30	10-DPT-1151	Onsite calibration, leak test of connectors, checking of isolating valves, loop verification.	DP Transmitter Rosemount		ACROSS CONTACTOR	1		
31	10-DPT-1292				ACROSS STRIPPER	1		
32	10-LT-102	Level troll internal	Level Transmitter Masoneilan		Spanners Set (In/mm)	INLET SEPERATOR	1	

		cleaning, Sensor inspection and setting, field signal electric connection checking, onsite calibration, verification and loop testing.		Screw Drivers Set Hex Key set. Multi-meter Pipe Wrench 18", 12"2. Transparent nylon tube of 1" dia, 10 meter length.	P/W		
33	10-LT-104				INLET SEPERATOR H/C	1	
34	10-LT-1140				OVERHEAD SCRUBBER	1	
35	10-LT-1203				FLASH DRUM	1	
36	10-LT-1219				SURG DRUM	1	
37	10-LT-1276				REFLUX DRUM	1	
38	10-LT-9314				STEAM CONDENSATE POT	1	
39	10-LT-1136	Dismantling, shifting to W/S, Record as fond calibration data, Sensor and cleaning, Calibration, re-installation, leak test of connectors, checking of isolating valves, loop verification.	Level Transmitter Rosemount	Screw Driver Set, Terminal Screw Drivers, Spanner Set mm/Inch, Multimeter, mA Current Source, Resistance box, Pressure Calibrators Low Pressure and High Pressure Ranges.HART Communicato r, consumables.	CONTACTOR	1	
40	10-LT-1250				STRIPPER	1	
41	10-TT-1139	Integrity testing of sensor, onsite calibration of transmitters, checking of electric signals and verification of complete loop.	RTDs	Spanners Set(In/mm) Screw Drivers Set Multi-meter Temperature Bath (500DegF)	CONT.FLASH DRUM	1	
42	10-TT-1253				STRIPPER TO XHE	1	
43	10-TT-1254				XHE TO STRIPPER	1	
46	10-TT-1264				STRIPPER TOP	1	
<b>H2S Removal Plant Train – 20</b>					<b>Location</b>		
47	20-PCV-2280	To record as found calibration data. Site calibration and integrity checks of actuator, positioner, I/P converter. Loop calibration through DCS. Provide soft and hard copies of assignments.	Size: 10" CL 150 Fisher Control Valve	Screw Driver Set, Terminal Screw Drivers, Spanner Set mm/Inch, Multimeter, mA Current Source, HART Communicato r, consumables	REFLUX DRUM	1	
48	20-TCV-2112		Size: 4" CL 150 Fisher Control Valve		STEAM TO INLET GAS	1	
49	20-TCV-2254		Size: 6" CL 600 Fisher Control Valve		BYPASS OF STRIP EX.	1	
50	20-PCV-2106		Size: 8" CL 150 Fisher Control Valve		CONTACTOR OUTLET	1	
51	20-PCV-2103		Size: 12" CL 600 AES(ROBOTARM)		MAIN INLET	1	
52	20-LCV-2140		Size: 1" CL 600 Fisher Control Valve		CONTACTOR OUTLET	1	
53	20-LCV-2203		Size: 8" CL 150 Fisher Control Valve		FLASH DRUM O/L TO STRP.	1	
54	20-PCV-2200		Size: 4" CL 150 Fisher Control Valve		FLASH DRUM	1	



55	20-FCV-2133	Dismantling, shifting to W/S, body & trim inspection, lapping of plug/seat (if reqd.), hydro testing, replacement of kits, actuator integrity testing and calibration, service of pneumatic regulator, I/P converter & positioner. Inspection/testing of SOVs (if required). Loop testing with DCS, Replacement of Poritioner if required	Size: 6" CL 600 Fisher Control Valve	Valve Lifting and shifting equipment, Scrwe Driver Set, Terminal Screw Drivers, Spanner Set mm/Inch, Multimeter, mA Current Source, HART Communicator, consumables	CIR PUMP TO CONTACTOR	1	
56	20-LCV-2136		Size: 6" CL 600 Fisher Control Valve		FLASH DRUM O-LET TO STR	1	
57	20-LCV-2276		Size: 2" CL 150 Control Valve Fisher		REFLUX DRUM LEVEL	1	
58	20-LCV-102		Size: 1" CL 600 Fisher Control Valve		P/W INLET GAS SEPARATOR	1	
59	20-LCV-104		Size: 1" CL 600 Fisher Control Valve		HC INLET GAS SEPARATOR	1	
60	20-LCV-9514		Size: 3" CL 150 Fisher Control Valve		STEAM CONDANSATE POT		
61	20-FCV-9515		Size: 1- 1/2" CL 150 Fisher Control Valve		STEAM TO STRIPPER		
62	20-PCV-2217		Size: 2" Regulator, Make: Fisher				
59	20-PCV-2218		Size: 2" Regulator, Make: Fisher		BLANKETING REGULATOR	1	
60	20-SDV-101		Greasing, testing of loop & on/off position, verification of position switches, service of all local pneumatic regulators, loop testing, testing/overhau ling of SOVs.		Size: 1" CL 600 EL-O-MATIC	Grease Gun, all necessary tools for the job	INLET GAS SEPT
61	20-SDV-102	Size: 1" CL 600 EL-O-MATIC	INLET GAS SEPT	1			
62	20-XSV-2101	Greasing, testing of loop & on/off position, verification of position switches, service of all local pneumatic regulators, loop testing, testing/overhau ling of SOVs.	SIZE:12" CL 600 Rotork	Grease Gun, all necessary tools for the job	TREATED GAS OUTLET	1	
63	20-XSV-2102		SIZE:12" CL 600 Rotork		FEED GAS INLET	1	
64	20-XSV-2144		SIZE:10" CL 600 Rotork		AMINE CONTACTOR O/L	1	
65	20-PT-2103	Onsite pressure calibration, leak test of connectors, checking of isolating valves, loop verification.	Pressure Transmitter Rosemount	Screw Driver Set, Terminal Screw Drivers, Spanner Set mm/Inch, Multimeter, mA Current Source, Resistance box, Pressure Calibrators Low Pressure and High Pressure Ranges.HART Communicator, consumables.	MAIN INLET	1	
66	20-PT-2106				FLARE INLET	1	
67	20-FT-2133	Dismantling, shifting to W/S, Record as fond calibration data, Sensor and cleaning, Calibration, re-installation, leak test of connectors, checking of	Flow Transmitter Rosemount		CIR PUMP TO CONT	1	
68	20-FT-2269				REF PMP TO STRPP	1	

		isolating valves, loop verification.					
69	20-FT-2107	Onsite calibration, leak test of connectors, checking of isolating valves, loop verification. Dimantling, Sensor cleaning or replacement if required.	Flow Transmitter Rosemount		MAIN GAS INLET	1	
70	20-FT-9511	Dismantling, shifting to W/S, Record as fond calibration data, Sensor and cleaning, Calibration, re-installation, leak test of connectors, checking of isolating valves, loop verification.			STEAM TO REBOILER	1	
71	20-FT-9515	Dismantling, shifting to W/S, Record as fond calibration data, Sensor and cleaning, Calibration, re-installation, leak test of connectors, checking of isolating valves, loop verification.			STEAM TO STRIPPER	1	
72	20-DPT-2151	Onsite calibration, leak test of connectors, checking of isolating valves, loop verification.	Diff Pressure Transmitters Rosemount		ACROSS CONTACTOR	1	
73	20-DPT-2292	Onsite calibration, leak test of connectors, checking of isolating valves, loop verification.			ACROSS STRIPPER	1	
74	20-LT-102	Level troll internal cleaning, Sensor inspection and setting, field signal electric connection checking, onsite calibration, verification and loop testing.	Level Transmitter Masoneilan	Spanners Set (In/mm) Screw Drivers Set Hex Key set. Multi-meter Pipe Wrench 18", 12"². Transparent nylon tube of 1" dia, 10 meter length.	INLET SEPERATOR P/W	1	
75	20-LT-104				INLET SEPERATOR H/C	1	
76	20-LT-2140				OVERHEAD SCRUBBER	1	
77	20-LT-2203				FLASH DRUM	1	
78	20-LT-2219				SURG DRUM	1	
79	20-LT-2276				REFLUX DRUM	1	
80	20-LT-9514				STEAM CONDENSATE POT	1	
81	20-LT-2136				Dismantling, shifting to W/S, Record as fond calibration data, Sensor and cleaning, Calibration, re-installation, leak test of connectors, checking of isolating valves, loop verification.	Level Transmitter Rosemount	Screw Driver Set, Terminal Screw Drivers, Spanner Set mm/Inch, Multimeter, mA Current Source, Resistance box, Pressure Calibrators Low Pressure and High
82	20-LT-2250	Dismantling, shifting to W/S, Record as fond calibration data, Sensor and cleaning, Calibration, re-installation, leak test of connectors, checking of isolating valves, loop verification.		STRIPPER	1		

83	20-LT-9501	Onsite calibration, leak test of connectors, checking of isolating valves, loop verification. Dimantling, Sensor cleaning or replacement if required.		Pressure Ranges.HART Communicator, consumables.		1	
84	20-TT-2139	Integrity testing of sensor, onsite calibration of transmitters, checking of electric signals and verification of complete loop.	RTDs	Spanners Set(In/mm)Screw Drivers SetMultimeter, Temperature Bath (500DegF)	CONT.FLASH DRUM	1	
85	20-TT-2253				STRIPPER TO XHE	1	
86	20-TT-2254				XHE TO STRIPPER	1	
87	20-TT-2264				STRIPPER TOP	1	
<b>Dehydration Train - 10</b>					<b>Location</b>		
88	10-PCV-100	To record as found calibration data. Site calibration and integrity checks of actuator, positioner, I/P converter. Loop calibration through DCS. Provide soft and hard copies of assignments. Replacement of Portioner if required	Size: 12" CL 600 Fisher Control Valve	Screw Driver Set, Terminal Screw Drivers, Spanner Set mm/Inch, Multimeter, mA Current Source, HART Communicator, consumables	DEHY O/L TO SALE GAS	1	
89	10-PCV-111		Size: 6" CL 600 Fisher Control Valve		SCRUBBER OUT TO FLARE	1	
90	10-PCV-215		Size: 1" CL 150 Fisher Control Valve		FLASH DRUM TO FLARE	1	
91	10-LCV-108		Size: 1" CL 600 Fisher Control Valve		INTEGRAL SCRUBBER	1	
92	10-LCV-112		Size: 1- 1/2" CL 600 Fisher Control Valve		GLYCOL CONTACTOR	1	
93	10-LCV-208		Size: 1- 1/2" CL 150 Fisher Control Valve		FLASH DRUM	1	
94	10-TCV-200		Size: 4" CL 300 Fisher Control Valve		STEAM LINE TO REBOILER	1	
	10-LCV-108		Size: 1" CL 600 Fisher Control Valve		INTEGRAL SCRUBBER	1	
95	10-FT-100	Onsite calibration, leak test of connectors, checking of isolating valves, loop verification. Dismantelling, Sensor cleaning, replacement if required	Transmitter Rosemount	Screw Driver Set, Terminal Screw Drivers, Spanner Set mm/Inch, Multimeter, mA Current Source, Resistance box, Pressure Calibrators Low Pressure and High Pressure Ranges.HART Communicator, consumables.	DEHY INLET	1	
96	10-FT-101A				DEHY OUTLET	1	
97	10-FT-101B				DEHY OUTLET	1	
98	10-FT-200				DEHY REBOILER	1	
99	10-FT-201				GLYCOL PUM OUTLET	1	
100	10-LT-206				SURGE DRUM	1	
101	10-DPT-107				CONTACTOR	1	
102	10-DPT-213				CARTRIDGE FILTER	1	
103	10-DPT-214	Dismantling, shifting to W/S, Record as found calibration data, Sensor and cleaning, Calibration, re-			CHARCOL FILTER	1	

		installation, leak test of connectors, checking of isolating valves, loop verification.					
104	10-PT-201	Onsite calibration, leak test of connectors, checking of isolating valves, loop verification. Dismantelling, Sensor cleaning, replacement if required			REBOILER PRESSURE	1	
105	10-PT-203				REBOILER.INLET	1	
106	10-PT-215				FLASH DRUM	1	
107	10-PT-100	Onsite calibration, leak test of connectors, checking of isolating valves, loop verification. Dismantelling, Sensor cleaning, replacement if required	Transmitter Rosemount	Screw Driver Set, Terminal Screw Drivers, Spanner Set mm/Inch, Multimeter, mA Current Source, Resistance box, Pressure Calibrators Low Pressure and High Pressure Ranges.HART Communicator, consumables.	SYSTEM PRESSURE	1	
108	10-PT-109				SALE GAS	1	
109	10-PT-212				GLYCOL PUMP OUTLET	1	
110	10-LT-108	On Site Level troll internal Cleaning, Sensor cleaning and setting, Field signal electric connection checking, Calibration verifications, loop testing.	Level Troll Masoneilan	Spanners Set (In/mm), Screw Drivers Set, Hex Key set, Multi-meter, Pipe Wrench 18", 12", Transparent nylon tube of 1"dia, 10 meter length.	INTEGRAL SCRUBBER	1	
111	10-LT-112				GLYCOL CONTACTOR	1	
112	10-LT-116				O/ HEAD SCRUBBER	1	
113	10-LT-208				FLASH DRUM	1	
114	10- SDV-103	Greasing, Testing of loop & On/ Off position, Verification of Position Switches, Testing/Overhauling Of SOVs, service of all local Pneumatic regulators.	Size: 10" CL 600 LEDEEN ITALIA	Crane, Spanner Set mm/Inch, Screw Driver Set, General Tools.	MAIN INLET	1	
115	10- SDV-104		Size: 2" CL 600 EL-O-MATIC		CONTACTOR.Outlet	1	
116	10- SDV-105		Size: 10" CL 600 LEDEEN ITALIA		SALE GAS LINE	1	
<b>Dehydration Train - 20</b>					<b>Location</b>		
117	20-PCV-100	To record as found calibration data. Site calibration and	Size: 12" CL 600 Fisher Control Valve	Screw Driver Set, Terminal Screw Drivers, Spanner Set	DEHY O/L TO SALE GAS	1	
118	20-PCV-111		Size: 6" CL 600 Fisher Control		SCRUBBER OUT TO FLARE	1	

		integrity checks of actuator, positioner, I/P converter. Loop calibration through DCS. Provide soft and hard copies of assignments. Replacement of Positioner if required	Valve	mm/Inch, Multimeter, mA Current Source, HART Communicator, consumables			
119	20-PCV-215		Size: 1" CL 150 Fisher Control Valve		FLASH DRUM TO FLARE	1	
120	20-LCV-108		Size: 1" CL 600 Fisher Control Valve		INTEGRAL SCRUBBER	1	
121	20-LCV-112		Size: 1- 1/2" CL 600 Fisher Control Valve		GLYCOL CONTACTOR	1	
122	20-LCV-208		Size: 1- 1/2" CL 150 Fisher Control Valve		FLASH DRUM	1	
123	20-TCV-200		Size: 4" CL 300 Fisher Control Valve		STEAM LINE TO REBOILER	1	
124	20-LCV-108		Size: 1" CL 600 Fisher Control Valve		INTEGRAL SCRUBBER	1	
125	20-FT-100	Onsite calibration, leak test of connectors, checking of isolating valves, loop verification. Dismantelling, Sensor cleaning, replacement if required			DEHY INLET	1	
126	20-FT-101A				DEHY OUTLET	1	
127	20-FT-101B				DEHY OUTLET	1	
128	20-FT-200				DEHY REBOILER	1	
129	20-FT-201				GLYCOL PUM OUTLET	1	
130	20-LT-206				SURGE DRUM	1	
131	20-DPT-107				CONTACTOR	1	
132	20-DPT-213	Dismantling, shifting to W/S, Record as found calibration data, Sensor and cleaning, Calibration, re-installation, leak test of connectors, checking of isolating valves, loop verification.			CARTRIDGE FILTER	1	
133	20-DPT-214		Transmitter Rosemount	Screw Driver Set, Terminal Screw Drivers, Spanner Set mm/Inch, Multimeter, mA Current Source, Resistance box, Pressure Calibrators Low Pressure and High Pressure Ranges.HART Communicator, consumables.	CHARCOL FILTER	1	
134	20-PT-201	Onsite calibration, leak test of connectors, checking of isolating valves, loop verification. Dismantelling, Sensor cleaning, replacement if required			REBOILER PRESSURE	1	
135	20-PT-203				REBOILER.INLET	1	
136	20-PT-215				FLASH DRUM	1	
137	20-PT-100	Onsite calibration, leak test of connectors, checking of isolating valves, loop verification. Dismantelling,			SYSTEM PRESSURE	1	
138	20-PT-109				SALE GAS	1	
139	20-PT-212		Transmitter Rosemount	Same As Job No. 3	GLYCOL PUMP OUTLET	1	

		Sensor cleaning, replacement if required						
140	20-LT-108	On Site Level troll internal Cleaning, Sensor cleaning and setting, Field signal electric connection checking, Calibration verifications, loop testing.	Level Troll Masoneilan	Spanners Set (In/mm) Screw Drivers Set Hex Key set. Multi-meter Pipe Wrench 18", 12"2. Transparent nylon tube of 1" dia, 10 meter length.	INTEGRAL SCRUBBER	1		
141	20-LT-112				GLYCOL CONTACTOR	1		
142	20-LT-116				O/ HEAD SCRUBBER	1		
143	20-LT-208				FLASH DRUM	1		
144	20- SDV-103	Greasing, Testing of loop & On/ Off position, Verification of Position Switches, Testing/Overhauling Of SOVs, service of all local Pneumatic regulators.	Size: 10" CL 600 LEDEEN ITALIA	Crane, Spanner Set mm/Inch, Screw Driver Set, General Tools.	MAIN INLET	1		
145	20- SDV-104				Size: 2" CL 600 EL-O-MATIC	CONTACTOR. OUT LET	1	
146	20- SDV-105				Size: 10" CL 600 LEDEEN ITALIA	SALE GAS LINE	1	
<b>Dehydration Train - 30</b>					<b>Location</b>			
147	30-PCV-100	To record as found calibration data. Site calibration and integrity checks of actuator, positioner, I/P converter. Loop calibration through DCS. Provide soft and hard copies of assignments. Replacement of Positioner if required	Size: 12" CL 600 Fisher Control Valve	Screw Driver Set, Terminal Screw Drivers, Spanner Set mm/Inch, Multimeter, mA Current Source, HART Communicator, consumables	DEHY O/L TO SALE GAS	1		
148	30-PCV-111				Size: 6" CL 600 Fisher Control Valve	SCRUBBER OUT TO FLARE	1	
149	30-PCV-215				Size: 1" CL 150 Fisher Control Valve	FLASH DRUM TO FLARE	1	
150	30-LCV-112				Size: 1- 1/2" CL 600 Fisher Control Valve	GLYCOL CONTACTOR	1	
151	30-LCV-208				Size: 1- 1/2" CL 150 Fisher Control Valve	FLASH DRUM	1	
152	30-TCV-200				Size: 4" CL 300 Fisher Control Valve	STEAM LINE TO REBOILER	1	
153	30-LCV-108				Size: 1" CL 600 Fisher Control Valve	INTEGRAL SCRUBBER	1	
154	30-FT-100	Onsite calibration, leak test of connectors, checking of isolating valves, loop verification. Dismantelling, Sensor cleaning and replacement if required.	Transmitter Rosemount	Screw Driver Set, Terminal Screw Drivers, Spanner Set mm/Inch, Multimeter, mA Current Source, Resistance box, Pressure Calibrators Low Pressure and High Pressure Ranges.HART	DEHY INLET	1		
155	30-FT-101A				DEHY OUTLET	1		
156	30-FT-101B				DEHY OUTLET	1		
157	30-FT-200				DEHY REBOILER	1		
158	30-FT-201				GLYCOL PUM OUTLET	1		
159	30-LT-206				SURGE DRUM	1		
160	30-DPT-107				CONTACTOR	1		
161	30-DPT-213				Onsite calibration, leak	CARTRIDGE FILTER	1	

162	30-DPT-214	test of connectors, checking of isolating valves, loop verification. Dismantelling, Sensor cleaning and replacement if required.		Communicator, consumables.	CHARCOL FILTER	1	
163	30-PT-201	Onsite calibration, leak test of connectors, checking of isolating valves, loop verification. Dismantelling, Sensor cleaning and replacement if required.			REBOILER PRESSURE	1	
164	30-PT-203				REBOILER.INLET	1	
165	30-PT-215				FLASH DRUM	1	
166	30-PT-100	Onsite calibration, leak test of connectors, checking of isolating valves, loop verification. Dismantelling, Sensor cleaning, replacement if required	Transmitter Rosemount	Same As Job No. 3	SYSTEM PRESSURE	1	
167	30-PT-109				SALE GAS	1	
168	30-PT-212				GLYCOL PUMP OUTLET	1	
169	30-LT-108	On Site Level troll internal Cleaning, Sensor cleaning and setting, Field signal electric connection checking, Calibration verifications, loop testing.	Level Troll Masoneilan	Spanners Set (In/mm) Screw Drivers Set, Hex Key set, Multi-meter, Pipe Wrench 18", 12", Transparent nylon tube of 1" dia, 10 meter, length.	INTEGRAL SCRUBBER	1	
170	30-LT-112				GLYCOL CONTACTOR	1	
171	30-LT-116				O/ HEAD SCRUBBER	1	
172	30-LT-208				FLASH DRUM	1	
173	30-SDV-103	Greasing, Testing of loop & On/ Off position, Verification of Position Switches, Testing/Overhauling Of SOVs, service of all local Pneumatic regulators.	Size: 10" CL 600 LEDEEN ITALIA	Crane, Spanner Set mm/Inch, Screw Driver Set, General Tools.	MAIN INLET	1	
174	30-SDV-104		Size: 2" CL 600 EL-O-MATIC		CONTACTOR.Outlet	1	
175	30-SDV-105		Size: 10" CL 600 LEDEEN ITALIA		SALE GAS LINE	1	
<b>LP Boilers 1 &amp; 2</b>					<b>Location</b>		

176	FCV-8062 (Both boilers)	To record as found calibration data. Site calibration and integrity checks of actuator, positioner, I/P converter. Loop calibration through DCS. Provide soft and hard copies of assignments. Replacement of Positioner if required	Size: 6" CL 150 Fisher Control Valve	Valve Lifting and shifting equipment, Screw Driver Set, Terminal Screw Drivers, Spanner Set mm/Inch, Multimeter, mA Current Source, HART Communicator, consumables	FUEL GAS BURNER	2	
177	LCV-8048 (Both boilers)	To record as found calibration data. Site calibration and integrity checks of actuator, positioner, I/P converter. Loop calibration through DCS. Provide soft and hard copies of assignments. Replacement of Positioner if required	Size: 3" CL 300 Fisher Control Valve	All necessary tools	FEED WATER IN LET	2	
178	PCV-8063 (Both boilers)	Dismantling, shifting to W/S, Inspection of Trim and cleaning, reassembling and testing.	Size: 6" Fisher Regulator	Screw Driver Set, Spanner Set mm/Inch, Hex Key Set, Consumables	GAS FUEL TRAIN	2	
179	LGP	Inspection & Calibration of Switch, Verification of Electrical Connections, inspection of loop,	Pressure Switches	Spanners Set (In/mm) Screw Drivers Set, Hex Key Set Multi-meter Pressure Calibrator/Dead Weight Tester (300 Psi).	SWITCH, LOW GAS PRESSURE	2	
180	HGP				SWITCH HIGH GAS PRESS.	2	
181	HFP				SWITCH HIGH FURNACE PRESS	2	
182	AS				SWITCH LOW COMB. Air Press.	2	
183	IAP				SWITCH LOW INST. AIR PRESS.	2	
184	HSP				SWITCH, HIGH STEM PRESS	2	
185	EHSP				SWITCH, EXCESS high steam press	2	
186	(Both boilers)					2	
187	WLS (Both boilers)	Dismantling, shifting to W/S, cleaning of float and internal body, re-	Float type level switch	Screw Driver Set, Spanner Set, Hex Key Set, Consumables	SWITCH, WATER LEVEL	2	



188	Low Cutout, Low Alarm, High alarm (Both boilers)	installation, Testing of operation, leak test of connectors, checking of isolating valves, loop verification.	Conductive Probe type Level Detector	Screw Driver Set, Spanner Set, Hex Key Set, Consumables	DRUM LEVEL	2	
189	PCV-9802	The loop test and Calibration, at location is required only. With I/P converter & Positioner	Size: 16" CL 150 Fisher Control Valve	General Calibration Tools	LP STEAM HEADER	1	
190	LT	Dismantling, shifting to W/S, Record as found calibration data, Sensor and cleaning, Calibration, re-installation, leak test of connectors, checking of isolating valves, choking removal, loop verification.	Level Transmitter	General Calibration Tools	DRUM LEVEL	2	
191	FT		Flow Transmitter	General Calibration Tools	FUEL GAS LINE	2	
192	PT-9802	On Site setting, Calibration, Field signal electric connection, Leak test of connectors. Checking of isolating valves, Loop verification	Press Transmitter	General Calibration Tools	LP STEAM HEADER	1	
<b>LP Boiler-3</b>					<b>Location</b>		
193	LCV-101	Record of as found calibration data, site calibration, Actuator, Positioner, I/P Converter testing and replacement if required. Loop Test with HMI at Local and Boiler operator room.	Size: 4" CL 300 ARCA REGLER	General Calibration Tools	LEVEL CONTROL VALVE	1	
194	FCV-301		Size: 8" CL 150 PARCOL		GAS FLOW CONTROL VALVE	1	
195	PCV-301		Size: 6" CL 150 PARCOL		GAS PRESSURE CONTROL VALVE	1	
196	PSH-101	Inspection & Calibration of Switch, Verification of Electrical Connections, inspection of loop,	Switches	Screw Driver Set, Terminal Screw Drivers, Spanner Set mm/Inch, Pressure Calibrators Low Pressure	BOILER DRUM VERY HIGH PRESSURE (PRESSURE SWITCH)	1	
197	LSLL-101				BOILER DRUM VERY LOW LEVEL (LEVEL SWITCH)	1	

198	LSL-101			and High Pressure Ranges.HART Communicator, consumables.	BOILER DRUM LOW LEVEL (LEVEL SWITCH)	1	
199	LSH-101				BOILER DRUM HIGH LEVEL (LEVEL SWITCH)	1	
200	PSL-202				INSTRUMENT AIR VERY LOW PRESSURE(PRESSURE SWITCH)	1	
201	PSLL-301				GAS VERY LOW PRESSURE(PRESSURE SWITCH)	1	
202	PSHH-301				GAS VERY HIGH PRESSURE(PRESSURE SWITCH)	1	
203	PSL-101				PRESSURE SWITCH	1	
204	LT-101	Dismantling, shifting to W/S, Record as found calibration data, Sensor and cleaning, Calibration, re-installation, leak test of connectors, checking of isolating valves, choking removal, loop verification.	Level Transmitter	Screw Driver Set, Terminal Screw Drivers, Spanner Set mm/Inch, Pressure Calibrators Low Pressure and High Pressure Ranges.HART Communicator, consumables.	UPPER STEAM DRUM LEVEL TRANSMITTER	1	
205	FT-101		Flow Transmitter		FLOW TRANSMITTER	1	
206	FT-102		Flow Transmitter		STEAM FLOW TRANSMITTER	1	
207	PT-101	On Site setting, Calibration, Field signal electric connection, Leak test of connectors. Checking of isolating valves, Loop verification	Transmitters	Screw Driver Set, Terminal Screw Drivers, Spanner Set mm/Inch, Multimeter, mA Current Source, Resistance box, Pressure Calibrators Low Pressure and High Pressure Ranges.HART Communicator, consumables.	UPPER STEAM DRUM PRESSURE TRANSMITTER	1	
208	PT-201				PRESSURE TRANSMITTER	1	
209	FT-201				COMBUSTION AIR FLOW TRANSMITTER	1	
210	AT-201				OXYGEN TRANSMITTER	1	
211	PT-301				GAS PRESSURE TRANSMITTER	1	
212	PT-302				GAS PRESSURE TRANSMITTER	1	
213	FT-301				GAS FLOW TRANSMITTER	1	
214	TT-301				GAS TEMPERATURE TRANSMITTER	1	
215	SDV-301	Inspection, Functional Testing & Calibration of Switch, Service/overhauling/parts replacement if	Size: 8" CL 150 VALBIA	Screw Driver Set, Multimeter, Consumables	MAIN GAS SHUT-OFF VALVE (SDV)	1	
216	SDV-302		Size: 2" CL 150 ADLER		MAIN GAS VENT VALVE (SDV)	1	
217	SDV-303		Size: 8" CL 150		BURNER GAS	1	

		required. Verification of Electrical Connections, inspection of loop,	VALBIA		SHUT-OFF- VALVE (SDV)		
218	XV-304		SOV		PILOT GAS VENT VALVE (SOV)	1	
219	XV-305		SOV		PILOT GAS VENT VALVE (SOV)	1	
220	XV-306		SOV		PILOT GAS SHUT-OFF VALVE (SOV)	1	
<b>Deaerator</b>					<b>Location</b>		
221	LV-9110	To record as found calibration data. Site calibration and integrity checks of actuator, positioner, I/P converter. Loop calibration through DCS. Provide soft and hard copies of assignments. Replacement of Portioner if required	Size: 1-1/2" CL 150 SPIRAX SARCO	Screw Driver Set, Terminal Screw Drivers, Spanner Set mm/Inch, Multimeter, mA Current Source, HART Communicato r, consumables	SOFT WATER TO DEAERATOR	1	
222	PV-9101		Size: 1-1/2" CL 150 SPIRAX SARCO		SATURATED STEAM I/ LET	1	
223	LT-9110	On Site Level troll internal Cleaning, Sensor cleaning and setting, Field signal electric connection checking, Calibration verifications, loop testing.	Level Troll Magnitroll	General Tools for LT Calibrations.	DEAERATOR LEVEL	1	
224	PT-9101	On Site setting, Calibration, Field signal electric connection, Leak test of connectors. Checking of isolating valves, Loop verification	Press Transmitter Rosemount	General Tools for PT Calibrations.	DEAERATOR PRESSURE	1	
225	TT-9101	Inspection of sensor, Hydro test of thermo well. Calibration of Transmitters,. Checking of electric signals and verification of complete loop.	Temp Transmitter Rosemount	General Tools for TT Calibration, Temp Bath 500 Deg F	DEAERATOR	1	
<b>Fuel Gas Skid</b>					<b>Location</b>		
226	PCV-9601	To record as found	Size: 3" CL 600 Fisher Control	Screw Driver Set, Terminal	RAW GAS TO HP SCRUBBER	1	

		calibration data. Site calibration and integrity checks of actuator, positioner, I/P converter. Loop calibration through DCS. Provide soft and hard copies of assignments. Replacement of Positioner if required	Valve	Screw Drivers, Spanner Set mm/Inch, Multimeter, mA Current Source, HART Communicator, consumables			
227	PCV-9603		Size: 4" CL 600 Fisher Control Valve		HP. SCRUBBER INLET	1	
228	PCV-9615		Size: 4" CL 300 Fisher Control Valve		LP. SCRUBBER INLET	1	
229	PT-9601	Sensor cleaning and setting, Calibration, Field signal electric connection checking, leak test of connectors. Checking of isolating valves, Loop verification	Press. Transmitter Rosemount	Screw Driver Set, Terminal Screw Drivers, Spanner Set mm/Inch, Multimeter, mA Current Source, Resistance box, Pressure Calibrators Low Pressure and High Pressure Ranges.HART Communicator, consumables.	RAW GAS TO HPSCRUBBER	1	
230	PT-9603				HP. SCRUBBER INLET	1	
231	PT-9615				LP. SCRUBBER INLET	1	
232	TE-9613	Inspection of sensor, Calibration of Transmitters, Checking of electric signals and verification of complete loop.	Temp. Transmitter Rosemount	Temp Bath, General Tools	TO HP BOILER	1	
233	TE-9616				TO LP FUEL	1	
234	FT-9612	On Site setting, Calibration, Field signal electric connection, Leak test of connectors. Checking of isolating valves, Loop verification	Flow Transmitter Rosemount	Pressure Calibrator, General Tools	HP. OUTLET TO HP BOILER	1	
235	FT -9617				LP. OUTLET TO UTILITIES	1	
236	XSV-9602	Greasing, Testing of loop & On/ Off position, Verification of Position Switches, Testing/Overhauling Of SOVs,	SIZE:8" CL 600 Rotork	General Tools	MAIN INLET TO FUEL GAS SKID	1	
237	90-LCV-9609	To record as found calibration data. Site calibration and integrity checks of actuator,	Size: 1" CL 300 Fisher Dump Valve	General Tools	HP Scrubber	1	
238	90-LCV-9622		Size: 1" CL 150 Fisher Dump Valve	General Tools	LP Scrubber	1	

		positioner, I/P converter. Loop calibration through DCS. Provide soft and hard copies of assignments. Replacement of Positioner if required					
<b>HP Boiler</b>					<b>Location</b>		
239	PSL- N/A	Inspection of sensor, tubing/ electric connections. Calibration of switch, Inspection of loop	Pressure Switch	Pressure Calibrator, General Tools	FUEL GAS LINE	1	
240	PSH- N/A				FUEL GAS LINE	1	
241	PSL-1045				COOLING AIR	1	
242	PSHH- N/A				STEAM PRESS	1	
243	PCV Control Valve Valtek	On site calibration of positioner / Convertor and valve Calibration, Loop Calibration/ Test	Size: 3" CL 150 Valtek Valve	General Tools	FUEL GAS LINE (VALTEK)	1	
244	FT-911	Sensor cleaning, inspection of electric signal and connections. Verification of operating parameters and calibration, loop test. Replacement of damaged and choked tube, checking of isolating valves, choking removal, Leak test of joints and connectors.	Transmitters	General calibration Equipment/Tools	STEAM FLOW	1	
245	LT-910				DRUM LEVEL	1	
246	PT-910	On Site Calibration, Checking of isolating valves, Loop verification	Transmitters	General calibration Equipment/Tools	STEAM PRESSURE	1	
247	LSSL	Inspection & Cleaning of Float, Verification of Security.	Level Switch	General Tools	DRUM LEVEL	1	
248	LCV (Feed Water)	Onsite Calibration	Size: 1-1/2" CL 300 Melso Control Valve				
<b>Incinerator</b>					<b>Location</b>		
249	PDSLL-9951	INSPECTION, CALIBRATION	PDSLL-9951	General calibration	AIR DAMPERS	1	

250	PDSLL-9950	& MAINTENAINC E JOB (If Reqd)	PDSLL- 9950	Equipment/Tools		1	
251	TCV- 9917	INSPECTION, CALIBRATION & MAINTENAINC E JOB (If Reqd) Body Hydro test in Workshop	SIZE: 4" CL 150 WORCESTER	General calibrton Equipment/Tools	GAS FUEL LINE	1	
252	TT- 9917	INSPECTION, CALIBRATION & MAINTENAINC E (If Reqd)		General Tools	CONTROL CABINET	1	
253	XSV- 9933	Dismantling, Shifting To W/S, Body & Trim inspection, Lapping of Plug/Seat (If Reqd.)	SIZE: 1-1/2" CL 150 MAXON		FLASHGASTO INCINERATOR	1	
254	XSV- 9935	Replacement of kits, Actuator integrity, Hydro test, Calibration, Shifting to location, Re-Installation, loop test, service of all local Pneumatic regulators, I/P Converters & Positioner. Painting Body as actual color arranged by Contractor.	SIZE: 1-1/2" CL 150 MAXON	Grease Gun, General Tools.	FLASHGASTO INCINERATOR	1	
255	Actuators & Positioner	Inspection / Testing / Position Verification Any Maintenance Job If Required	Actuators & Positioner	General Tools	DAMPERS	1	
256	PSLL-9912	Inspection & Calibration Of Switch,	PSLL-9912		FUEL GAS TO INCINERATOR	1	
257	PSHH-9918	Verification of Electrical Connections, inspection of loop,	PSHH-9918	General calibrton Equipment/Tools	FUEL GAS TO INCINERATOR	1	
<b>Cooling Tower</b>					<b>Location</b>		
258	FCV- 9803	To record as found calibration data. Site calibration and integrity checks of actuator, positioner, I/P converter. Loop calibration	Size: 4" CL 150 Fisher Control Valve	Scrwe Driver Set, Terminal Screw Drivers, Spanner Set mm/Inch, Multimeter, mA Current Source, HART Communicato	COOLING TOWER BLOW DOWN	1	

		through DCS. Provide soft and hard copies of assignments. Replacement of Poritioner if required		r, consumables			
259	LT-9801	Onsite calibration, leak test of connectors, checking of isolating valves, loop verification.	Level Transmitter Masoneilan	Spanners Set (In/mm) Screw Drivers Set Hex Key set. Multi-meter Pipe Wrench 18", 12"2. Transparent nylon tube of 1" dia, 10 meter length.	COOLING WATER MAKE-UP (BASIN)	1	
260	LCV-9801	To record as found calibration data. Site calibration and integrity checks of actuator, positioner, I/P converter. Loop calibration through DCS. Provide soft and hard copies of assignments. Replacement of Poritioner if required	Size: 6" CL 150 Fisher Control Valve	Scrwe Driver Set, Terminal Screw Drivers, Spanner Set mm/Inch, Multimeter, mA Current Source, HART Communicato r, consumables	COOLING WATER MAKE-UP	1	
261	FT- 9803	Sensor cleaning and setting, Field signal electric connection checking, Calibration verifications, loop testing. Checking of isolating valves	Flow Transmitter Rosemount	General calibrtrion Equipment/Tools	COOLING TOWER BLOW DOWN	1	
262	FT-9805				COOLING WATER MAKE-UP	1	
263	FT-9809				COOLING TOWER SUPPLY	1	
264	PT-9813	On Site Level troll internal Cleaning, Sensor cleaning and setting, Field signal electric connection checking, Calibration verifications, loop testing. Checking of isolating valves	Press. Transmitter Rosemount	General calibrtrion Equipment/Tools	COOLING TOWER SUPPLY	1	
<b>Water Treatment Plant</b>					<b>Location</b>		
265	KV-9005-A	Dismantling, Shifting to W/S	Size: 6" Butterfly Valves	Screw Driver Set, Terminal	PRESS.FILTER S A	1	

266	KV-9009-A	Inspection and cleaning of respective SOVs, Body, Disc and Seal Inspection, Checking the integrity of actuator, Cleaning/overhauling of Manual Override, Shifting to location, Re-Installation, On/Off Testing		Screw Drivers, Spanner Set mm/Inch, Hex Key Set	PRESS.FILTER S A	1	
267	KV-9006-A				PRESS.FILTER S A	1	
268	KV-9027-A				PRESS.FILTER S A	1	
269	KV-9004-B	Dismantling, Shifting to W/S Inspection and cleaning of respective SOVs, Body, Disc and Seal Inspection, Checking the integrity of actuator, Cleaning/overhauling of Manual Override, Shifting to location, Re-Installation, On/Off Testing	Size: 6" Butterfly Valves	Screw Driver Set, Terminal Screw Drivers, Spanner Set mm/Inch, Hex Key Set	PRESS.FILTER S B	1	
270	KV-9005-B				PRESS.FILTER S B	1	
271	KV-9009-B				PRESS.FILTER S B	1	
272	KV-9006-B				PRESS.FILTER S B	1	
273	KV-9033-A	Dismantling, Shifting to W/S Inspection and cleaning of respective SOVs, Body, Disc and Seal Inspection, Checking the integrity of actuator, Cleaning/overhauling of Manual Override, Shifting to location, Re-Installation, On/Off Testing	Size: 6" Butterfly Valves	Screw Driver Set, Terminal Screw Drivers, Spanner Set mm/Inch, Hex Key Set	SIDE STREAM FILTERS A	1	
274	KV-9034-A				SIDE STREAM FILTERS A	1	
275	KV-9032-A				SIDE STREAM FILTERS A	1	
276	KV-9035-A				SIDE STREAM FILTERS A	1	
277	KV-9033-B	Dismantling, Shifting to W/S Inspection and cleaning of respective SOVs, Body, Disc and Seal Inspection, Checking the integrity of actuator, Cleaning/overhauling of Manual Override, Shifting to	Size: 6" Butterfly Valves	Screw Driver Set, Terminal Screw Drivers, Spanner Set mm/Inch, Hex Key Set	SIDE STREAM FILTERS B	1	
278	KV-9034-B				SIDE STREAM FILTERS B	1	
279	KV-9032-B				SIDE STREAM FILTERS B	1	
280	KV-9035-B				SIDE STREAM FILTERS B	1	



		location, Re-Installation, On/Off Testing						
281	KV-9033-C	Dismantling, Shifting to W/S Inspection and cleaning of respective SOVs, Body, Disc and Seal Inspection, Checking the integrity of actuator, Cleaning/overhauling of Manual Override, Shifting to location, Re-Installation, On/Off Testing	Size: 6" Butterfly Valves	Screw Driver Set, Terminal Screw Drivers, Spanner Set mm/Inch, Hex Key Set	SIDE STREAM FILTERS C.	1		
282	KV-9034-C				SIDE STREAM FILTERS C.	1		
283	KV-9032-C				SIDE STREAM FILTERS C.	1		
284	KV-9035-C				SIDE STREAM FILTERS C.	1		
<b>EGTs 1,2,3 &amp; 4 -- Fuel GAS Skid/Turbine Skid/TCM</b>					<b>Location</b>			
285	PCV-1	Calibration, loop test, service of all local Pneumatic regulators. The calibrations Tools of the vender must be certified by some recognized institution.	Size: 1-1/2" CL 600 Valtek Valve	Pressure Calibrator, General Tools	EGT's Fuel gas skid	1		
286	PCV-1A		Size: 1-1/2" CL 600 Valtek Valve			1		
287	PSV-1	Removing from location, testing in workshop/bench and record "as found set" value (Psig/Bar), disassembling for Lapping trim and overhauling completely (if required), assembling, setting (provided by OGDCL) cold set points and reinstallation	Size 4"x6"	Crane, Screw Driver Set, Terminal Screw Drivers, Spanner Set mm/Inch, Hex Key Set, Pressure Source 2000PSI, Other calibration equipment. PSV Test Bench. Consumables	EGT's Fuel gas skid	1		
288	PSV-2		Size 1"x1"			EGT's Fuel gas skid	1	
289	PSV-3		Size 1"x1"			EGT's Fuel gas skid	1	
290	NYA	Dismantling, Shifting To W/S, Body & Trim inspection, Lapping of Plug/Seat (If Reqd.) Replacement of kits, Actuator integrity, Hydro	Dump Valve 1" 600CL	General Tools	Horizontal K/O Vessel at EGT's Area.	4		

		test, Calibration, Shifting to location, Re-Installation, loop test, service of all local Pneumatic regulators.					
291	03 Turbines	Inspection/ cleaning of all SOV's and Diaphragm Valves.	Pneumatic purging Cleaning by pulse controller	General Tools	Enclosure and Ventilation Purging and ventilation system.	72	
292	04 Turbines	Dismantling of valves from location, shifting to workshop, inspection and maintenance , changing of repair kit, reinstallation and verification of operation, on-off position		General Tools	BLOW OFF VALVE (01 No. Each Unit)	4	
293	04 Turbines	Pressure Switches On Site Calibration Check	Hand Pump Pneumatic Pressure Calibrator, General Tools	General Tools	Pressure Switches (05 Nos. Each Unit)	20	
294	04 turbines	Pressure Tx On Site Calibration Check	Hand Pump Pneumatic Pressure Calibration General Tools.	General Tools	Transmitters (06 Nos. Each Unit)	24	
<b>PRESSURE SAFETY VALVES:-</b>							
<b>Boiler/Utilities Area</b>					<b>Location</b>		
295	LP1-PSV-8001	Removing from location, testing in workshop/bench and record "as found set" value (Psig/Bar), disassembling for Lapping trim and overhauling completely (if required), assembling, setting (provided by OGDCL) cold set points and reinstallation.	Size: 4" x 6"	Crane, Screw Driver Set, Terminal Screw Drivers, Spanner Set mm/Inch, Hex Key Set, Pressure Source 2000PSI, Other calibration equipment. PSV Test Bench. Consumables.	LP1 BOILER	1	
296	LP1-PSV-8002		Size: 6" x 6"		LP1- BOILER	1	
297	LP2-PSV-8001		Size: 4" x 6"		LP2- BOILER	1	
298	LP2-PSV-8002		Size: 6" x 6"		LP2- BOILER	1	
299	HP1-PSV-915		Size: 1" x 1", Make: ESER		HP1- BOILER	1	
300	HP1-PSV-916		Size: 1" x 1", Make: ESER		HP1- BOILER	1	
301	HP1-PSV-917		Size: 1" x 1", Make: ESER		HP1- BOILER	1	
302	HP2-PSV-A		Size: 2" x 3", Make: FARRIS		HP2-A	1	
303	HP2-PSV-B		Size: 2" x 3", Make: FARRIS		HP2-B	1	
304	HP2-PSV-C		Size: 2" x 3", Make: FARRIS		HP2-C	1	
305	DE-AREATOR	Size: 3" x 4", Make: TELEDYNE	DE-AREATOR	1			

306	LP3-PSV-A		Size: 6" x 8", Make: CROSBY		LP3 Boiler	1	
307	LP3-PSV-B		Size: 6" x 8", Make: CROSBY		LP3 Boiler	1	
308	LP3-PSV-C		Size: 6" x 8", Make: CROSBY		LP3 Boiler	1	
309	PSV-9606		Size: 6" x 8", Make: TELEDYNE		Fuel Gas Skid	1	
310	PSV-9619		Size: 6" x 8", Make: TELEDYNE		Fuel Gas Skid	1	
<b>H2S Removal Plant Train-10</b>					<b>Location</b>		
311	10-PSV-1211		Size: 3" x 4", Make: TELEDYNE		Amine Cooler	1	
312	10-PSV-9316		Size: 3/4" x 1", Make: TELEDYNE		Condensate Pot	1	
313	10-PSV-9410		Size: 3" x 4", Make: TELEDYNE		Amine Solution Cooler	1	
<b>H2S Removal Plant Train-20</b>					<b>Location</b>		
314	20-PSV-2211		Size: 3" x 4", Make: TELEDYNE		Amine Cooler	1	
315	20-PSV-9516		Size: 3/4" x 1", Make: TELEDYNE		Condensate Pot	1	
<b>Dehydration Train-10</b>					<b>Location</b>		
316	10-PSV-201	Removing from location, testing in workshop/bench and record "as found set" value (Psig/Bar), disassembling for Lapping trim and overhauling completely (if required), assembling, setting (provided by OGDCL) cold set points and reinstallation.	Size: 2"x 3/4", Make: HYDROSEAL	Crane, Screw Driver Set, Terminal Screw Drivers, Spanner Set mm/Inch, Hex Key Set, Pressure Source 2000PSI, Other calibration equipment. PSV Test Bench. Consumables.	Glycol Pump Discharge Train-10	1	
317	10-PSV-202		Size: 2"x 3/4", Make: HYDROSEAL		Glycol Pump Discharge Train-10	1	
<b>Dehydration Train-20</b>					<b>Location</b>		
318	20-PSV-201	Removing from location, testing in workshop/bench and record "as found set" value (Psig/Bar), disassembling for Lapping trim and overhauling completely (if required), assembling,	Size: 2"x 3/4", Make: HYDROSEAL	Crane, Screw Driver Set, Terminal Screw Drivers, Spanner Set mm/Inch, Hex Key Set, Pressure Source 2000PSI, Other calibration equipment. PSV Test	Glycol Pump Discharge Train-10	1	
319	20-PSV-202		Size: 2"x 3/4", Make: HYDROSEAL		Glycol Pump Discharge Train-10	1	

		setting (provided by OGDCL) cold set points and reinstallation.		Bench. Consumables.			
<b>Dehydration Train-30</b>					<b>Location</b>		
320	30-PSV-201	Removing from location, testing in workshop/bench and record "as found set" value (Psig/Bar), disassembling for Lapping trim and overhauling completely (if required), assembling, setting (provided by OGDCL) cold set points and reinstallation.	Size: 2"x 3/4", Make: HYDROSEAL	Crane, Screw Driver Set, Terminal Screw Drivers, Spanner Set mm/Inch, Hex Key Set, Pressure Source 2000PSI, Other calibration equipment. PSV Test Bench. Consumables.	Glycol Pump Discharge Train-10	1	
321	30-PSV-202		Size: 2"x 3/4", Make: HYDROSEAL		Glycol Pump Discharge Train-10	1	

## TERMS & CONDITIONS FOR CONTRACTORS UCH-I GAS PROCESSING PLANT ATA-2020

### OGDCL'S RESPONSIBILITIES:

- 1- OGDCL will provide blind/spades for isolation and pressure testing. However the blinds which are not available in stock, contractor may fabricate with available SS/MS sheets.
- 2- Only lodging (accommodation) will be provided to the Contractor manpower. The arrangement for 300 persons is available at site.
- 3- Only Emergency/First Aid medical coverage will be the responsibility of OGDCL.
- 4- All gaskets and direct material/spare parts will be provided.
- 5- OGDCL will provide paint for jobs wherever mentioned in scope of work.
- 6- OGDCL will provide pumps, tanks and hosepipes for in-place chemical cleaning of plate type heat exchangers, vessels & columns only.
- 7- Although the plant has a safe history however adequate security umbrella as provided to the Company's employees will be extended for Contractor's manpower.

### CONTRACTOR'S RESPONSIBILITIES:

- 1- The technical manpower must be qualified/skilled and have at least five years experience in its trade in the field of Oil & Gas/Petrochemical Processing Plants. Contractor skilled manpower will be interviewed by OGDCL professionals in all disciplines (Mechanical, Electrical and Instrument), if deemed necessary and contractor should arrange the interview at their premises. The detailed CV's of direct manpower/supervisors is mandatory.
- 2- Contractor will ensure mobilization of all manpower and resources at least two weeks before commencement of ATA.
- 3- Skilled manpower will be deployed for seven days after completion of shutdown for testing/startup activities. Moreover, Rotary Team shall remain at site until satisfactory operation/testing of all rotary equipment. (Approximately 7-10 days after plant startup).
- 4- Locals should be given preference while hiring of skilled/unskilled manpower.
- 5- The contractor should plan ATA activities (direct/associated) using latest version of Primavera and submit their planned schedule covering all the

activities for carrying out ATA of UCH-I Gas Plant successfully with high level quality within stipulated time period. (Soft copy of Primavera Plan is mandatory with summarized plan and a detailed plan indicating critical path activities, equipment wise resource planning and deployment)

- 6- Contractor should prepare/submit daily progress report and percentage Gantt chart (planned vs actual) at end of the day.
- 7- Tools and consumables for the execution of each job including welding / fabrication consumables for all repair and modification jobs.
- 8- Painting job where ever given in the scope including painting equipment/tool like brushes, rollers, spray nozzles/guns, hosepipes etc.
- 9- Pneumatic Ejectors/Blowers for the ventilation of Columns and Vessels as per job scope requirement.
- 10- 24V Lighting arrangement for confined space jobs, i.e. inside the columns and vessels.
- 11- In case of any accident, OGDCL will provide only general first aid whereas any other medical treatment would be the responsibility of contractor.
- 12- Contractor shall arrange the standardized test bench for manual valves, control valves & PSV's pressure testing and interconnecting pipes, tubes, hoses for hydro-test and PSV's bench.
- 13- All tools, consumables and calibration equipment/tools for all instruments, control valves & PSV's should be the responsibility of contractor.
- 14- Site administration personnel with associated resources like computer, printers, photocopiers etc.
- 15- Contractor should arrange the blind flanges for PSV's, control valves and manual valves testing which will not be available at OGDCL store stock.
- 16- Contractor will arrange certified E & I calibration and testing equipments, the certificates will be submitted before execution of ATA. Original 3<sup>rd</sup> party calibration certificates will be verified by OGDCL representative upon arrival of equipment.
- 17- Nitrogen gas for PSV's and Regulators testing will be arranged by contractor.
- 18- Certified Cranes and fork lifters suitable to carry out the activities within stipulated time frame.

- 19- Precision Lathe machines for the repair of manual valves, control valves & PSV's as per work scope requirement.
- 20- Gaskets for pressure testing/bench test of manual valves, control valves & PSV's.
- 21- Water jetting machines with PSV calibration certificate and all other accessories up to 15000psig operating pressure for hydro-jetting of heat exchangers etc. as per job scope requirement.
- 22- Refractory work of Incinerators and Boilers including material is responsibility of contractor and should be carried out through M/S Refra Product, Karachi or any other local expert firm/company in this field (Refer clause # 23 of explanatory notes).
- 23- Scaffolding material and services, as when and where required.
- 24- Electrical Supply Boards/Cables along with earth leakage circuit breaker as per HSE standard.
- 25- Pneumatic/24V tools for confined spaces i.e. grinders/power brushes (Vessel and Columns).
- 26- Contractor will arrange sufficient air compressors in view of complete scope of work (ventilation/filter cleaning/pneumatic tools etc.)
- 27- Shock absorbing safety harness and respirators for contractor employees as per job requirement.
- 28- Contractor will submit Company HSE Policy manual for implementation of safe execution of each activity with zero-injury target. In case of any accident, OGDCL will not be liable for any claim like insurance etc.
- 29- Provision of PPE'S to their manpower and each worker should display ID card (HSE concern)
- 30- Original certificates of lifting gears, cranes, crane operators, hydro-jetting machines, drivers etc. will be mandatory checked by OGDCL HSE representative. Furthermore, contractor will submit copy of these certificates to HSE representative of OGDCL (HSE Concern)
- 31- The valid certification of welders, scaffolder etc. will be mandatory. Tags should be displayed for certified scaffolding (HSE Concern).
- 32- **HSEQ manpower by contractor:**
  - a. I/C HSEQ should be B.E Mech/Chemical with Nebosh certification with at least 05 Years of relevant experience.

- b. Supervisors should Graduate/D.A.E having Safety Courses certificates with at least 5 Years of relevant experience.
  - c. HSE assistant should be at least Intermediate having Safety Courses/ certificates with at least 5 Years of relevant experience)
  - d. Well-equipped First Aider & Rescuers (Trained/Certified at least 02 Nos.) e.g ropes/pulley, tri-pod, stretchers, medicines etc.
  - e. HSEQ crew will be interviewed by OGDCL HSEQ representative before commencement of ATA.
- 33- Contractor shall arrange Decanting pumps for ETP Sump Pit, Cooling Tower basin, Cooling Water Pump suction pit etc. wherever mentioned in SOW.
- 34- Contractor shall submit WPS & PQR for welding jobs prior to execution of job no deviation will be permissible.
- 35- Contractor shall depute qualified quality control Engineer having Level-II, Level-III CSWIP 3.1, API certification for the supervision of welding/modification jobs.
- 36- DPT of all welding jobs (Repair work/Modifications) shall be the responsibility of main execution contractor including material.
- 37- Submit Total no's of deployed manpower list (designation wise) for the execution of individual job.
- 38- Contractor shall provide adequate meals and laundry services to their employees. Local area Contractor's may be introduced to provide such services.
- 39- Contractor will arrange transport for the pick and drop for their manpower from Colony to Plant and back for the whole period and also from Jacobabad to field & back. Fitness certificate for vehicles and drivers will be mandatory. Vehicles deployed for said purpose will be inspected by OGDCL and will not be allowed to use if found unfit.
- 40- Contractor should ensure the police verification of all manpower direct and indirect and must have bio-data file of each. (Security concern)
- 41- Contractor manpower must have CNIC and Contractor identity card.
- 42- Contractor should ensure his manpower has no any kind of ammunition and narcotics. (Security concern)
- 43- Mobiles and photo camera are prohibited in the plant premises and contractor should be ensured. (Security concern).



- 44- Contractor should deploy his own fully equipped security to control the manpower's in/out movement in plant as well as at colony with the coordination of OGDCL security incharge. (Security concern).**

**Note:**

- Financial evaluation will be carried out on Grand Total basis. Contract will be awarded to technically responsive and financially lowest evaluated bidder.
  - The prices shall be quoted in Pak Rupees.
  - The prices shall be inclusive of all taxes (except Provincial Sales Tax/ ICT Tax on Services, where applicable), duties, levies, charges etc. Provincial Sales Tax/ ICT Tax on Services, if applicable will be borne by OGDCL.
  - **Payment Terms:** Payment will be made in Pak Rupees through cross cheque at actual against verified invoices after completion of ATA Job.
- 
- **Duration of contract**

Contract duration will be initially for a period of six months from the date of issuance of Service Order extendable with written mutual consent of both the parties.

- Bid bond of PKR 1,000,000/- (Pak Rupees One Million Only) must be submitted with the technical bid. Please see master set of tender documents (services) for further detail.
- The master set of tender documents (services) uploaded on OGDCL website ([www.ogdcl.com](http://www.ogdcl.com)) is the integral part of this TOR.