

# **OIL & GAS DEVELOPMENT COMPANY LIMITED**

## **TERMS OF REFERENCE (TOR) SCOPE OF WORK(SOW)**



**TENDER ENQUIRY NO: PROC-SERVICES/CB/P&P-4239/2019**

**HIRING OF SERVICES FOR EXECUTION OF ATA-2019 OF KPD-TAY PLANT**

Note: Master set of tender documents (services) uploaded on OGDCL's website ([www.ogdcl.com](http://www.ogdcl.com)) is the integral part of this TOR/Tender.

# **Annexure-A**

## **TERMS OF REFERENCE (TOR) SCOPE OF WORK(SOW)**

### **GENERAL SCOPE:**

- 1.1 The Owner, Oil & Gas Development Company Limited (OGDCL) is interested in inviting bids for the provision of services (Mechanical, Electrical & Instrumentation) at their KPD-TAY Plant for the execution of the Annual Turnaround (ATA) 2019 maintenance activities from reputable companies in this field. The tentative schedule of annual shutdown is from 01.04.2019 to 13-04-2019 (13 days), planned to be executed partially, shutdown of each train for 09 days inclusive of shutting down & start up time and complete shutdown. The contractor shall develop and submit a detailed work schedule including mobilization and preparatory works prior to shut down & post shutdown. Tentative schedule is attached.
- 1.2 Contractor must complete the desired services as per TOR within specified time mentioned above from the date of issuance of Service Order by OGDCL.
- 1.3 Contractor shall be allowed to mobilize resources & manpower 7-10 days before commencement of ATA. Contractor can mobilize limited resources any time before ATA with the prior approval of OGDCL Plant Management for pre-shutdown activities. However, Contractor shall ensure to mobilize all resources before the start date of ATA in order to complete all ATA activities without delay.
- 1.4 Contractor should demobilize all resources within 07 days after completion of ATA activities & post shutdown activities.
- 1.5 The Contractor shall quote separate rate in PKR for each activity against the quantities mentioned in the scope of work and accommodation as well. Moreover, contractor will also be responsible for electric power and water supply for their own manpower at their residence camp.
- 1.6 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.
- 1.7 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 (Refer Scope Registers for Items).

- 1.8 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. The successful contractor will be required to submit detailed procedures for undertaking shutdown jobs especially repair works, modification jobs and Chemical Cleaning for Owner's approval in due course after award of contract.
- 1.9 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 etc., shall be the Contractor's responsibility.
- 1.10 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.
- 1.11 Unit rates quoted by bidder shall be firm. No extra payments on account of escalation in prices due to any reason shall be admissible.
- 1.12 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.
- 1.13 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 on advice of Company.
- 1.14 Removal / Re-installation of hot & cold insulation where applicable shall be the responsibility of Contractor (materials to supply by OGDCL).
- 1.15 The contractor will arrange cranes and all other shifting/lifting/rigging gears for all activities to be carried out during ATA.
- 1.16 All tools, machinery, special equipment shall be supplied by Contractor.
- 1.17 Skilled manpower should be well experienced in their respective crafts.
- 1.18 OGDCL HSEQ Rules & Regulations will be strictly observed & followed by the Contractor.

- 1.19 Contractor will be responsible for dismantling, shifting to workshop and back to site after maintenance, re-installation and alignment of motors with skilled millwright teams.
- 1.20 The contractor will arrange the material required for the refractory repair work of hot oil furnaces/heater.
- 1.21 Contractor will perform hydro testing/ pressure testing of heat exchangers (as per mechanical scope register)
- 1.22 Contractor will develop and submit general hydro test procedure for each exchanger in bid for Technical Evaluation. However specific procedure will be submitted at site minimum seven days before start of ATA for approval.
- 1.23 Contractor will fabricate all hydro testing / pressure testing assemblies, test rings (where required) and arrange hydro testing pumps prior to start of ATA.
- 1.24 Contractor will arrange all the material for fabrication of hydro testing/ pressure testing assemblies and test rings.
- 1.25 Contractor will hand over all the assemblies and test rings to OGDCL after completion of ATA-2019.
- 1.26 Contractor will fabricate, arrange all assemblies, tubing or hoses to fill water/ Nitrogen gas for hydro testing/pressure testing (complete in all aspects).
- 1.27 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) will be developed by keeping in view of under-mentioned references and requirements. Furthermore, contractor shall submit the method statement of repair jobs, hydro testing of mechanical valves (as required, which typically include repaired and leaky valves), at least one week before the commencement of ATA for Owner's approval.

#### **1A 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

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

- 2.1 The Contractor shall quote separate rates for each/individual valve (The valves nos. and type mentioned in Mech Scope Register).
- 2.2 Contractor shall submit methodology / procedure for repairing and testing of valves with respect to the standards specified in the engineering references above.
- 2.3 The repair and build up of valves' seats will be carried out with approved electrodes in accordance with applicable standards (if required).
- 2.4 All valves will be tested for seat tests & body test.
- 2.5 Lapping of valve seats shall be carried out on high-level precision machine.

**OGDCL'S RESPONSIBILITIES:**

- 3.1 OGDCL will provide blind/ spades for isolation and pressure testing. However, the blinds which are not available in stock, contractor will fabricate with MS sheets. MS sheets will be provided by OGDCL.
- 3.2 OGDCL will arrange NDT/Third party inspection.
- 3.3 Only plan Area will be provided to contractor for accommodation and all other boarding and lodging arrangement will be at contractor end considering manpower requirement.
- 3.4 OGDCL will provide gaskets and direct material/spares parts.
- 3.5 OGDCL will provide de-mineralized water for hydro testing.
- 3.6 OGDCL will provide nitrogen for purging/blasting activities.

**CONTRACTOR'S RESPONSIBILITIES:**

- 4.1 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.
- 4.2 Contractor will arrange the accommodation and three-time meal for their manpower, electric power, and water supply and laundry services at their camp.
- 4.3 Contractor shall deal/communicate with the locals directly.
- 4.4 Emergency/First Aid medical coverage will be the responsibility of contractor.

- 4.5 Although the plant has a safe history however contractor where deemed necessary will arrange their own security.
- 4.6 Pumps, tanks and hosepipes for in-place chemical cleaning to be arranged by contractor.
- 4.7 The Contractor shall quote separate rate in PKR for each activity against the quantities mentioned in the scope of work. Contractor shall mention mobilization & demobilization charges separately.
- 4.8 The contractor should plan ATA activities (direct/associated) using latest version of MS Project or equivalent and submit their planned schedule covering all the activities for carrying out ATA of KPD-TAY LPG Gas Processing Plant successfully with high level quality within stipulated time period.
- 4.9 Contractor shall submit in the technical bid; Manpower histogram, to be plotted on each-day basis to show the nos. of people to be on site for execution of ATA works scope. The manpower should be segregated/ separately shown for Mech, Electrical and Instrumentation & Control.
- 4.10 Contractor shall submit in the technical bid; Lev-1 or 2 (MS Project or equivalent) schedule to demonstrate how the ATA work will be executed within OGDCL specified time line. The schedule must include all major machinery and tools/ equipment required to carry out ATA activities.
- 4.11 Contractor should prepare/submit daily progress report and percentage Gantt chart (planned vs actual) at end of the day.
- 4.12 Job compatible tools and consumables for the execution of each job is contractor's responsibility including the chemicals (Cleaners and Neutralizers compatible with metallurgy) required for internal cleaning of columns and Trim Coolers and external cleaning of fins and tubes of fin-fan coolers.
- 4.13 Contractor will be responsible for dismantling, shifting to workshop and back to site after maintenance, re-installation and alignment of motors with skilled millwright teams.
- 4.14 In case of any accident, contractor should have its own medical facility however OGDCL may provide only general first aid as a good gesture.
- 4.15 Contractor shall arrange the standardized valve test bench for manual valves, control valves & PSV's pressure testing.
- 4.16 All calibration equipment/tools for all instruments, control valves & PSV's should be the responsibility of contractor.
- 4.17 Site administration personnel with associated resources like computer, printers, photocopiers etc.

- 4.18 Contractor will arrange certified E & I calibration and testing equipments, the certificates will be submitted before execution of ATA.
- 4.19 Contractor shall arrange all Cranes, trucks and fork lifters suitable to carry out all the activities within stipulated time frame. Contractor shall submit equipment deployment plan along with technical bid.
- 4.20 Precision Lathe machines for the repair of manual valves, control valves & PSV's along with Teflon Bar and Rubber O-ring (sizes: 2" to 10" dia) as per work scope requirement.
- 4.21 Test equipment for PSV's and regulators testing will be arranged by contractor. In this regard, we prefer test bench along with air compressor.
- 4.22 Gaskets for pressure testing/bench test of manual valves, control valves & PSV's.
- 4.23 Water jetting machines with all accessories up to 15000 psig operating pressure for hydro-jetting of heat exchangers etc. as job scope requirement.
- 4.24 Chemical cleaning arrangement for X-H.E's, Vessels and Piping etc.
- 4.25 Fin Fan coolers external cleaning arrangement (tanks, chemical and suitable pump arrangement of such type cleaning) will be the contractor responsibility.
- 4.26 Scaffolding material will be arranged by contractor.
- 4.27 Electrical Supply Boards / Cables along with earth leakage circuit breaker as per HSE standard.
- 4.28 Pneumatic tools for confined spaces (Vessel and Columns).
- 4.29 Contractor should be responsible to use Hydra tight tools for Heat exchangers de-bolting and tightening of bolts, and other sensitive area work due to high BTU gas system for safe execution.
- 4.30 Contractor will perform hydro testing of heat exchangers (as per mechanical scope of work). Contractor will develop and submit hydro test method statement in bid for technical evaluation.
- 4.31 Contractor will arrange all material and fabricate hydro testing assemblies and test rings for heat exchangers (where required) along with compatible hydro testing pumps. Contractor shall hand over test rings and testing assemblies to OGDCL after completion of ATA.
- 4.32 Contractor will provide all the calibration certificates (Hard and Soft copy) of all the instruments which will be calibrated in the ATA as per given scope.
- 4.33 Shock absorbing safety harness and breathing apparatus for contractor employees as per job requirement.

- 4.34 The proper certification of lifting gears, cranes, lifters, crane operators, drivers etc. will be mandatory. Contractor shall submit detail along with bid.
- 4.35 Contractor should arrange HSE I/C, supervisors, inspectors, first aiders, hole watcher, rescuer, fireman and housekeeping man as per work plan activities (well-equipped team).
- 4.36 Contractor shall perform plant housekeeping at the end of ATA including cleaning of open drain channel of complete plant and dispose of the recovered waste.
- 4.37 Refractory work of hot oil furnaces/heaters including material is responsibility of contractor. However, contractor can sub contract and arrange experienced team for repair of refractory.
- 4.38 Total nos of deployed manpower list (designation wise) with organogram for the execution of individual job along with manpower deployment plan shall be submitted in the technical bid.
- 4.39 Contractor will arrange transport for the pick and drop for their manpower from residence camp to plant and back for the whole period and also from Hyderabad/Karachi etc. to field & back.
- 4.40 Contractor should ensure the police verification (as per OGDCL requirement), of all manpower direct and indirect, must have bio-data file of each. Deployed manpower should have no criminal record.
- 4.41 Contractor manpower must have CNIC and Contractor identity card.
- 4.42 Contractor should ensure his manpower don't have / possess any kind of ammunition and narcotics.
- 4.43 Mobiles and photo camera are prohibited in the plant premises and contractor should be ensured.
- 4.44 Contractor should deploy his own fully equipped security to control the manpower's in/out movement in plant as well as at residence camp and store with the coordination of OGDCL security Incharge.
- 4.45 Contractor should rectify any breakdown/damage of equipment, material, spare parts due to contractor fault, mismanagement / manhandling.
- 4.46 Contractor to arrange Electrical Supply Boards (EXd rated class as well as non EXd- Specific to EXd Zone-I &II where work is being performed) with Cables for all activities planned in ATA. Supply boards should be EXd certified with Earth leakage breakers, EXd rated glands and receptacles. Contractor to make sure that these boards are sufficient in numbers to avoid shortage during ATA and sufficient man power should be deputed to ensure power supply up to point of consumption. OGDCL will only provide points at which three phase/single power is available at plant area.



- 4.47 Contractors to provide SOPs of all tests / checks / maintenance to be performed on electrical & mechanical equipment, provide detail of test equipment.
- 4.48 Electrical Contractor to arrange 220VAC temporary illuminations wherever required at site. These fixtures should be rated as per EXd ratings relevant to area of installation. Their supply to temporary DBs and all relevant cabling will be at contractor scope. OGDCL will only provide electrical connection points at site.
- 4.49 QA/QC documents will be provided by contractor after complete overhauling/maintenance/repairing job.
- 4.50 Contractor will provide data in binder form.
- 4.51 Contractor to arrange pneumatic/24V (intrinsically safe, explosion proof) High RPM exhaust Fans for the ventilation of Columns and Vessels.
- 4.52 Contractor to arrange 24V Lighting arrangement with power source inside the Column and vessels.
- 4.53 Contractor to arrange and install suitable ventilation system to maintain safe entry for people in columns and vessels.
- 4.54 Contractor shall extend the support for any maintenance activities during startup of the plant.

**CONTRACTOR'S HSE RESPONSIBILITIES:**

- 5.1 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.
- 5.2 Provision of PPE'S to their manpower and each worker should display ID card (HSE concern)
- 5.3 Original certificates of lifting gears, cranes, crane operators, hydro-jetting machines, drivers etc. will be mandatory checked by OGDCL Maintenance representative. Furthermore, contractor will submit copy of these certificates to HSE representative of OGDCL (HSE Concern).
- 5.4 The valid certification of welders, scaffolder etc. will be mandatory. Tags should be displayed for certified scaffolding (HSE Concern).
- 5.5 HSEQ manpower by contractor
- 5.6 Manpower to be acquired by contractor, competence and skill to be mentioned. Contractor to provide CV of the manpower
- 5.7 HSEQ Officer should be graduate engineer with Nebosh certification with at least 05 Years of relevant experience.

- 5.8 Supervisor should be Graduate / D.A.E having Safety Courses certificates with at least 5 Years of relevant experience.
- 5.9 HSE assistant should be at least Intermediate having Safety Courses/ certificates with at least 5 Years of relevant experience).
- 5.10 Well-equipped First Aider & Rescuers (Trained/Certified at least 02 Nos.) e.g. ropes/pulley, tri-pod, stretchers, medicines etc.
- 5.11 Contractor to provide Job Safety Plan for critical jobs and respective arrangement regarding preventive measure (safety gadget, HSE equipments etc.) and mitigation measures (in case of emergency e.g. SCBA, rescuer, first aider, specialized arrangement tripod stand for evacuation from confined space etc.)
- 5.12 Emergency Response Plan by the contractor.
- 5.13 Mobiles and photo camera are prohibited in the plant premises and contractor should be ensured. (HSE / Security concern).
- 5.14 Smoking will be allowed only in designated areas.
- 5.15 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.
- 5.16 HSEQ crew will be interviewed by OGDCL HSEQ representative before commencement of ATA by OGDCL.
- 5.17 Skilled manpower should be well experienced in their respective crafts.
- 5.18 Contractor shall strictly observe & follow OGDCL HSEQ Rules & Regulations, OGDCL contractor management manuals, HSE protocol for project management.

**MOBILIZATION / DEMOBILIZATION PERIOD:**

- 6.1 Contractor shall be allowed to mobilize resources & manpower 7-10 days before commencement of ATA. Contractor can mobilize limited resources any time before ATA with the prior approval of OGDCL Plant Management for pre-shutdown activities. However, Contractor shall ensure to mobilize all resources before the start date of ATA in order to complete all ATA activities without delay.
- 6.2 Contractor should demobilize all resources within 07 days after completion of ATA activities & post shutdown activities.

**NON-COMPLIANCE WITH TERMS / PENALTIES:**

- 7.1 If Contractor does not mobilize within agreed time period; OGDCL will have the right to terminate the contract and confiscate the performance bond / guarantee etc.
- 7.2 If Contractor regrets or fails to provide the service or complete the agreed job (which is part of the service order/contract) during ATA then the Contractor shall be liable to pay penalty

@ 5% of the total contract value (including mobilization & demobilization charges), which will be deducted from the invoice & charges of that specific job will also not be paid. However, if OGDCL hold or terminate / delete any services, job scope then no penalty will be imposed to the Contractor but the payment of that particular job will not be paid to Contractor.

- 7.3 If Contract is terminated due to negligence / fault at the part of the Contractor, then mobilization & demobilization charges will not be paid and Company has the right to confiscate the performance bond / guarantee.
- 7.4 In case of any damage or break down of the equipment due to maintenance fault, assembly, disassembly, box up, Contractor will bear all cost of services, consumables & parts used to restore the equipment in original condition.

#### **MINIMUM REQUIREMENTS FOR BIDDER QUALIFICATION:**

All the interested parties intending to participate to execute the ATAs must fulfil all the requirements / parameters required for bidder qualification as per tender document in their bids. The evaluation of the bids shall be done through grading of the contractors according to marks calculated as per criteria defined in Annexure-A. A Contractor should earn minimum qualifying marks in each category & total 70 marks as overall in order to qualify. The Minimum qualifying marks in each category are also defined in Annexure-A.

8.1 The Contractor(s) are required to provide the following documents for bidder qualification:

- i. Certified copy of valid NTN / GST certificates.
- ii. Contractor profile.
- iii. Documentary proof for providing the satisfactory services for ATA / Shutdown (which include copy of purchase orders, Contract, completion certificates showing nature of job, client name & value) of at least 03 years in oil & gas, refinery or petrochemical plants. ATA at other plant like sugar, textile, cement, power plants etc. will not be considered. Project (like erection of new plants etc.) experience will not be considered as ATA experience.
- iv. Comprehensive list of all available equipment, tools, camp, office & workshop facilities, logistic equipment, cranes, lifters etc. should be provided. It may be verified physically if OGDCL deem necessary.
- v. Contractor's site organogram of ATA, manpower deployment plan & equipment deployment plan with total numbers of each craft, machinery, tools etc. It should cover all required resources (manpower, machinery & tools) specially; Mechanical, Instrument, Electrical, HSEQ, Inspection crews etc.
- vi. CVs of the all Management & Supervisory ATA team (as per organogram). The Managers, Engineers, supervisors should have experience of ATA execution.
- vii. List of all the offices and service agencies across Pakistan.

- viii. Contractor's HSEQ policy & detail required to claim the marks as per annexure-A Sr. No. 05.
  - ix. Verifiable copy of purchase orders & satisfactory performance certificate from Oil & Gas companies, refineries or petrochemical plants for execution of previous ATA in order to claim the marks as per Annexure-A.
  - x. Lev-1 or 2 (MS Project or equivalent) schedule to demonstrate how the ATA work will be executed within OGDCL specified time line. The schedule must include all major machinery and tools/ equipment required to carry out ATA activities.
- 8.2 In case of bid submitted by any Joint Venture Contractors, original JV agreement must be provided by the lead partner/bidder. However, Experience of ONLY lead partner in JV will be considered for allocation of marks in Technical Evaluation of bidders.
- 8.3 Contractor declared as black listed at PPRA website will not be entertained.
- 8.4 Contractor shall have strong financial strength to meet the execution of ATA services, evidence of financial resources / strength should be provided.

**Important Note:**

- a) All interested parties / bidders are requested to visit KPD-TAY site to clarify / understand the scope of work if deem necessary. It will also be helpful to understand the scope, to avoid unnecessary clarification & submit the bid well in time.
- b) OGDCL requirement for bidders is to explicitly demonstrate in their "Technical Bid Submission" that they have allocated enough manpower, machinery, equipment, tools, consumables etc. to carry out all ATA activities safely and within planned timeline. Any of the bidders appearing to be short of resources in their technical bid submission may be rejected, if found non-compliant / non-responsive to OGDCL requirements. It should also be noted that after award of ATA Contract by OGDCL, Contractor shall have sole responsibility to review the current situation/ onsite situation (including any changes to priorities by OGDCL) and arrange the additional resources (people/ machinery, Tools, equipment, consumables etc.) to ensure ATA delivery within stipulated timeline and OGDCL defined targets. All such activities shall be performed without additional and/or extra cost to OGDCL.
- c) Bidder shall confirm to provide & execute all activities as per TOR / Scope of work, any bidder who will obtain 70 marks but not confirm to execute complete TOR / Scope of work will be declared as technically non responsive.

## CONTRACTOR TECHNICAL QUALIFICATION CRITERIA

Sr. No	Evaluation Item	Description of Criteria	Max. Marks / Calculations	Maximum Marks	Minimum Qualifying Marks	Remarks
1.	Contractor strength to execute Mechanical, Electrical & Instrumentation work.	Contractor should have experience for execution of Mechanical, Electrical and Instrument works in ATAs.	Fully Complied = 15	15	15	The Contractor should submit the detail of scope of work along with supporting documents to prove that they have executed Mechanical, Electrical & Instrument activities during ATAs. Experience of Contractor itself will be considered only (experience of manpower is separately covered in TOR)
2.	Specific experience of Annual Turn Around (ATA).	Contractor's experience of ATAs.	Contractor shall earn 06 marks against each ATA up to maximum of 30 marks, Only 05 ATAs will be considered for Marks calculation.	30	10	In order to get 06 Marks for each ATA, the value/ worth of each previous ATA performed by contractor should be at least 10 Million (PKR). If value/ Cost of ATA performed is less than 10 Million but above 07 Million (PKR) 05 points each. If value/ Cost of ATA performed is less than 07 Million but above 04 Million (PKR) 04 points each. If value/ Cost of ATA performed is less than 04

Sr. No	Evaluation Item	Description of Criteria	Max. Marks / Calculations	Maximum Marks	Minimum Qualifying Marks	Remarks
						Million but above 1.5 Million (PKR) 03 points each. If value/ Cost of ATA performed is less than 1.5 Million then it will not be considered.
3.	Certifications.	Contractor should provide following valid certificates; 1. ISO 9000 certification: 2. ASME U/R/S-Stamp 3. PEC Registration	1. 04 Marks 2. 03/02/02 Marks 4. 04 Marks	15	04	Contractor should submit the valid copy of certificates. If the certificate status is in progress no marks shall be given.
4.	Offices, Workshop, Tools, Equipment, Machinery, Infrastructure.	Contractor should have following facilities with in Pakistan. 1. Workshop & office, 2. Tools to execute the ATA activities (Mechanical, Instrument, Electrical). 3. Equipment / Machinery (Valve test bench, hydro jetting machines, welding machines/ Generators). 4. Cranes, fork lifters. 5. Relevant professional CVs & site deployment Organogram for Mechanical,	1. 03Marks 2. 08 Marks  3. 03 Marks  4. 06 Marks (04 + 02) 5. 10 Marks.	30	15	Established workshop: 02 Marks Established Office: 01 Marks  Mechanical tools: 04 Marks. Instrument tools: 02 Marks. Electrical tools: 02 Marks.  01 Marks for each main equipment / Machinery.  01 Crane (Min 25 tons). 02 Marks Max: 04 Marks 01 fork lifters (Min 3 Tons). 01 Mark Max: 02 marks  Organogram: 02 Mark. Mechanical CVs: 04 Mark

Sr. No	Evaluation Item	Description of Criteria	Max. Marks / Calculations	Maximum Marks	Minimum Qualifying Marks	Remarks
		Instrument & Electrical works.				Electrical CVs: 02Mark Instrument CVs: 02Mark
5.	Safety & HSE Policy	<p>1. Contractor's documentary evidence of HSE policy with commitment to provide PPE, Helmet, Ear plugs and safety shoes to the skilled labour at work.</p> <p>2. Well defined HSE policy with commitment and to provide 1 Million Safe Man hours' record.</p> <p>3. Deployment of first aid boxes &amp; medical team for the labour at site.</p>	<p>1. 04 Marks for full compliance , partial compliance zero Marks.</p> <p>2. 04 Marks,</p> <p>3. 02 Marks for full compliance partially compliance zero Marks.</p>	10	06	The Contractor who will provide 1 Million safe man hours record will be awarded 04 marks while the Contractor who will provide 0.5 Million safe man hours record will be awarded 02 Marks.

Total Marks= 100

Minimum Qualifying Marks = 70

**Note:**

**All contractors / bidders are requested to provide all required documents in the technical bid, Points calculation will be carried out as per available record / evidence in the bid. Only minor clarification may be acquired as per OGDCL requirement with 1 to 2 days' notice as we have very close schedule for execution of ATA.**

1. Contractors capable of executing Electrical, Instrument & Mechanical activities will be considered for qualification. Partial compliance i.e. if the Contractor has experience of mechanical jobs only, having no experience in Electrical & Instrumentation field & vice versa, then it will be not considered for qualification.
2. Contractor should get minimum qualifying marks in each category as mentioned in above table. Contractor will not be qualified if above mentioned minimum qualifying marks in any category will

*not be scored by the contractor. In addition, the total marks should also be not less than 70. Any contractor who will score less than 70 marks shall not be considered for qualification.*

- 3. Contractor must have three years' total experience of providing ATA/ shutdown services. Contractors having experience less than three years will be disqualified & shall not be considered for qualification even if they score marks more than 70 as per above tabulated criteria. In order to prove three years' experience, Contractor can claim the ATA whose worth / value is less than Rs.1.5 million however these ATA shall not be considered for marks calculation and only ATAs having worth / value more than Rs. 1.5 million will be considered for marks calculation as per above table Sr. No. 02.*
- 4. In case of JV, original JV agreement must be provided by the lead partner/bidder. However Experience of ONLY lead partner in JV will be considered for allocation of marks in Technical Evaluation of bidders.*



## FINANCIAL BID FORMAT/EVALUATION CRITERIA

### KPD-TAY Plant ATA-2019

Sr.	Description	Price in PKR (exclusive of PST/ICT)
01.	Cost of Services for ATA jobs, activity wise breakdown should be provided as per enclosed document / scope of work (the cost must be inclusive of all types of equipments, tools, manpower, machinery, consumables and PPE) for  I. Mechanical works  II. Electrical works  III. Instrument works	
02.	Mob / Demob Cost (lumpsum)	
03.	<b>Total cost (exclusive of PST/ICT)</b>	

**Note:**

1. Total Price should be inclusive of all taxes (except Provincial Sales Tax/ ICT Tax on services in Pakistan), duties, levies, charges etc.
2. Bidders are requested to quote the above mentioned rates separately for each activity of the jobs at Sr. No. 01. & provide the activity wise break down **as per attached list.**
3. OGDCL reserves the right to delete / cancel any activity mentioned in the scope of work at any stage of the ATA and payment will be made as per actual job done.
4. **Contract will be awarded to technically qualified and financially lowest evaluated bidder on complete package basis.**

**Note:**

- i. Bid price must be quoted in PKR otherwise the bid will be rejected.
- ii. Bid price shall be inclusive of all taxes, duties, levies, charges etc., except Provincial Sales Tax (PST)/ Islamabad Capital Territory Sales Tax (ICT) on services in Pakistan.
- iii. The prices quoted by the successful bidder (contractor) for required services shall remain firm and final throughout contract period. The price charged by the successful bidder (contractor) for required services shall not vary from the prices quoted by the service company.
- iv. There will be an estimated Amount Contract.
- v. Price shall be quoted against each activity however payment will be made as per actual against verified invoices.

**6. BID PRICE:**

- i) Bid price must be quoted in PKR otherwise the bid will be rejected.
- ii) Bid price shall be inclusive of all taxes, duties, levies, charges etc., except Provincial Sales Tax (PST)/ Islamabad Capital Territory Sales Tax (ICT) on services in Pakistan.
- iii) The prices quoted by the successful bidder (contractor) for required services shall remain firm and final throughout contract period. The price charged by the successful bidder (contractor) for required services shall not vary from the prices quoted by the service company.

**(This clause shall prevail instead of Master Tender document "ITB" clause # 06 'BID PRICE')**

**PAYMENT TERMS:**

100% payment will be made after completion of job as per Scope of Work and against verified invoices at actual along with completion certificate issued by OGDCL.

**(This clause will prevail instead of Master Tender document "ITB" clause # 07 'PAYMENT').**

**AMOUNT OF BID BOND:**

Bid Bond /Bid Security amounting to **PKR: 900,000/-** is to be attached / provided with the technical bid. Please see Master Set of Tender Document for further details.

**Note:-**

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



OIL & GAS DEVELOPMENT COMPANY LIMITED								
KPD-TAY PLANT - ATA 2019 (MECHANICAL SCOPE OF WORK REGISTER)								
Act #	Tag #.	Job Description	Specifications	Tools Required	Remarks	QTY	Unit Price (exclusive of PST/ICT)	Total Price (exclusive of PST/ICT)
<b>PRE-SHUTDOWN ACTIVITIES</b>								
1		Connection for N2 Pumper				1		
2		Installation of scaffoldings at equipment as per job requirement.			Bidder to add cost in each activity which required scaffolding. Separate lump sum cost will not be paid.			
<b>GENERAL SHUTDOWN ACTIVITIES</b>								
1		Depressurising and N2 purging			At Start of shut down, As per schedule of each unit / plant / train.	1		
2		Complete Blinding of battery limits			At Start of shut down, As per schedule of each unit / plant / train.	1		
3		De-blinding of battery limits			At end of shut down, As per schedule of each unit / plant / train.	1		
4		Leak Testing and N <sub>2</sub> purging			At end of shut down, As per schedule of each unit / plant / train.	1		
<b>POST-SHUTDOWN ACTIVITIES</b>								
1		Removal of all scaffoldings			Bidder to add cost in each activity which required scaffolding.			
2		Re-Installation of insulation			Bidder to add cost in each activity which required insulation			
3		Overall housekeeping/Area Cleaning			Part of ATA activities, no separate cost will be paid.			
<b>AMINE UNIT (TRAIN-01 &amp; 02) - 02 UNITS:-</b>								
<b>GROUP-A: COLUMNS:-</b>								
AA1	C - 4402	Amine Regenerator (Qty: 02 Nos.)			20 Trays SA-240 316L Drawings not available			
1	&	Blinding			N1 N2 Spiral wound gasket 18" 150# SS316L-F.G 2EA (Wire Mesh Type Demister Pad. Drawing not available)			
2	C - 5402	Water / Chemical flushing and cleaning/inplace cleaning	ID 11 ft x 75.33 ft length (TL/TL)		Scaffolding Material			
3		Opening of manways.			N3 N4 Spiral wound gasket 4" 150# SS316L-F.G 2EA (Oil Catcher 1EA SA-240 316L)			
4		Ventilation / Safety clearance / Confined space entry			N5-1 N5-2 N6-1 N6-2 Spiral wound gasket 16" 150# SS316L-F.G 4EA	2		
5		Initial Inspection						
6		M.Cleaning of Column Shell internal, vortex breaker, distributor, bridle & LG's etc.	No. of trays = 20					
7		Final inspection			N7-1 N7-2 N8 Spiral wound gasket 14" 150# SS316L-F.G 3EA			
8		Boxup & Deblinding, Housekeeping			N9 Spiral wound gasket 8" 150# SS316L-F.G 1EA			

OIL & GAS DEVELOPMENT COMPANY LIMITED								
KPD-TAY PLANT - ATA 2019 (MECHANICAL SCOPE OF WORK REGISTER)								
Act #	Tag #.	Job Description	Specifications	Tools Required	Remarks	QTY	Unit Price (exclusive of PST/ICT)	Total Price (exclusive of PST/ICT)
AA2	C-4401	Amine Absorber (Qty: 02 No.)			N1-1 N1-2 Spiral wound gasket 14" 600# SS316L-F.G 2EA	2		
1	&	Blinding	ID 9.5 ft x 73.67 ft length (TL/TL)	Spanner Size = 7"	N2 N3 Spiral wound gasket 12" 600# SS316L-F.G 2EA			
2	C-5401	Water / Chemical flushing and cleaning/inplace cleaning		Scaffolding Mate	N4 Spiral wound gasket 14" 600# SS316L-F.G 1EA			
3		Opening of manways.			M1 M2 M3 M4 Spiral wound gasket 24" 600# SS316L-F.G 4EA			
4		Ventilation / Safety clearance / Confined space en	No. of trays = 24		N5 N7 RTJ Oval Ring R37 SS316L 2EA			
5		Initial Inspection	I.D. of Manway = 24 in 600# WN/RF 04 Nos.		N6 L1-1 L1-2 L2-1 L2-2 L3-1 L3-2 P1-1 P1-2 T1-1 T1-2 T1-3 T1-4 T1-5 T1-6 U1 S2-1 S2-2 RTJ Oval Ring R24 SS316L 18EA			
6		M.Cleaning of Column Shell internal, vortex breaker, distributor, bridle & LG's etc.	Bolt Size = 1 7/8"		L4-1 L4-2 RTJ Oval Ring R31 SS316L 2EA			
7		Final inspection						
8		Boxup & Deblinding, Housekeeping						
<b>GROUP-B: VESSELS:-</b>								
AB1	V-3901	K-Test Separator (Qty: 01 Nos.)			N1 Spiral wound gasket 8" 600# SS316L-F.G 1EA	1		
1		Blinding	Horizontal Vessel	Spanner Size = 7"	N2 Spiral wound gasket 3" 600# SS316L-F.G 1EA			
2		Water Flushing		Scaffolding Mate	N3 Spiral wound gasket 6" 600# SS316L-F.G 1EA			
3		Opening of manways.	Size: 1000 mm ID x 4500 mm (TL/TL)		N4 N5 N6 N7 Spiral wound gasket 2" 600# SS316L-F.G 4EA			
4		Ventilation / Safety clearance / Confined space en	I.D. of Manway = 24 in. 600# WN/RF 01 No.		I1 I2 Spiral wound gasket 1 1/2" 600# SS316L-F.G 2EA			
5		Internal Inspection of vessel			I3 Spiral wound gasket 3/4" 600# SS316L-F.G 1EA			
6		Cleaning of vessel, demisters, internals, bridle & LG's.	Bolt Size = 1 7/8"		I4-A I4-B I5-A I5-B I6-A I6-B I7-A I7-B Spiral wound gasket 2" 600# SS316L-F.G 8EA			
7		Final inspection			M1 Spiral wound gasket 24" 600# SS316L-F.G 1EA			
8		Boxup & Deblinding, Housekeeping						
AB2	V-4201	K-Production Separator (Qty: 01 Nos.)			N1 Spiral wound gasket 20" 600# SS316L-F.G 1EA			
1		Blinding	Horizontal Vessel	Spanner Size = 7"	N2 Spiral wound gasket 06" 600# SS316L-F.G 1EA			
2		Water Flushing		Scaffolding Mate	N3 Spiral wound gasket 16" 600# SS316L-F.G 1EA			
3		Opening of manways.	Size: 1980 mm ID x 6706 mm (TL/TL)		N4 N5 N7 Spiral wound gasket 2" 600# SS316L-F.G 3EA			

OIL & GAS DEVELOPMENT COMPANY LIMITED								
KPD-TAY PLANT - ATA 2019 (MECHANICAL SCOPE OF WORK REGISTER)								
Act #	Tag #.	Job Description	Specifications	Tools Required	Remarks	QTY	Unit Price (exclusive of PST/ICT)	Total Price (exclusive of PST/ICT)
4		Ventilation / Safety clearance / Confined space en	I.D. of Manway = 24 in. 600# WN/RF 01 No.		N6 Spiral wound gasket 4" 600# SS316L-F.G 1EA	1		
5		Internal Inspection of vessel			I1 I2 Spiral wound gasket 1 1/2" 600# SS316L-F.G 2EA			
6		Cleaning of vessel, demisters, internals, bridle & LG's.	Bolt Size = 1 7/8"		I3 Spiral wound gasket 3/4" 600# SS316L-F.G 1EA			
7		Final inspection			I4-A I4-B I5-A I5-B I6-A I6-B I7-A I7-B Spiral wound gasket 2" 600# SS316L-F.G 8EA			
8		Boxup & Deblinding, Housekeeping			M1 Spiral wound gasket 24" 600# SS316L-F.G 1EA			
<b>AB3</b>	<b>V-5201</b>	<b>T-Production Separator (Qty: 01 Nos.)</b>			N1 Spiral wound gasket 12" 600# SS316L-F.G 1EA			
1		Blinding	Horizontal Vessel	Spanner Size = 7	N2 Spiral wound gasket 4" 600# SS316L-F.G 1EA			
2		Water Flushing		Scaffolding Mate	N3 Spiral wound gasket 10" 600# SS316L-F.G 1EA			
3		Opening of manways.	Size: 1370 mm ID x 5100 mm (TL/TL)		N4 N5 N7 Spiral wound gasket 2" 600# SS316L-F.G 3EA			
4		Ventilation / Safety clearance / Confined space en	I.D. of Manway = 24 in. 600# WN/RF 01 No.		N6 Spiral wound gasket 6" 600# SS316L-F.G 4EA	1		
5		Internal Inspection of vessel			I1 I2 Spiral wound gasket 1 1/2" 600# SS316L-F.G 2EA			
6		Cleaning of vessel, demisters, internals, bridle & LG's.	Bolt Size = 1 7/8"		I3 Spiral wound gasket 3/4" 600# SS316L-F.G 1EA			
7		Final inspection			I4-A I4-B I5-A I5-B Spiral wound gasket 2" 600# SS316L-F.G 4EA			
8		Boxup & Deblinding, Housekeeping			I7-A I7-B Spiral wound gasket 6" 600# SS316L-F.G 2EA			
					M1 Spiral wound gasket 24" 600# SS316L-F.G 1EA			
<b>AB4</b>	<b>V-4401</b>	<b>Feed Gas K.O drum (Qty: 02 Nos.)</b>			(13) C E1 E2 F H1 H2 RTJ Oval Ring R24 SS316L 6EA			
1	&	Blinding	Vertical vessel		(19)A B Spiral wound gasket 10" 600# SS316L-F.G 2EA			
2	<b>V-5401</b>	Opening of manways.	ID 6.5 ft x 9.5 ft length (TL/TL)	Spanner Size = 6	(31) D RTJ Oval Ring R37 SS316L 1EA	2		
3		Ventilation / Safety clearance / Confined space en	Manway = 20",600#,RF	Scaffolding Mate	(43) G RTJ Oval Ring R45 SS316L 1EA			
4		Internal cleaning of complete vessel.			MW Spiral wound gasket 20" 600# SS316L-F.G 1EA			
5		Cleaning of LG's, bridle of K.O. vessel	Bolt Size = 1 5/8"					
6		Inspection						
7		Boxup & Deblinding, Housekeeping						

OIL & GAS DEVELOPMENT COMPANY LIMITED								
KPD-TAY PLANT - ATA 2019 (MECHANICAL SCOPE OF WORK REGISTER)								
Act #	Tag #.	Job Description	Specifications	Tools Required	Remarks	QTY	Unit Price (exclusive of PST/ICT)	Total Price (exclusive of PST/ICT)
AB5	V-4402	Feed Gas Filter Coalscer (Qty: 02 Nos.)			Manway 42" 600# RF SS316L-F.G 1EA (SERIES NOT GIVEN)	2		
1	&	Blinding	ID 3.28 ft	Spanner Size = 9"	P1 P2 K1 K2 J1 J2 G D C1 C2 B 2" 900# RJ LWN 11EA			
2	V-5402	Opening of top cover	10 ft length (WL/WL)	Scaffolding Mate	L 2" 900# RJ LWN 01EA			
3		Removal of Filters	Bolt Size = 2 1/2"		I 4" 900# RJ LWN 01EA			
4		Internal cleaning of Vessel/Shell, LGs, bridle			H F 3" 900# RJ LWN 02EA			
5		Reinstallation/Replacement of Filters			A E 10" 900# RJ LWN 02EA			
6		Inspection						
7		Boxup & Deblinding, Housekeeping						
AB6	V-4403	Treated Gas K.O drum (Qty: 02 Nos.)			(8) RTJ Oval Ring R24 SS316L 17EA	2		
1	&	Blinding			(16) RTJ Oval Ring R31 SS316L 1EA			
2	V-5403	Water Circulation and flushing			(22) RTJ Oval Ring R37 SS316L 2EA			
3		Opening of manways.	ID 6.5 ft x 15 ft	Spanner Size = 7"	(30) Spiral wound gasket 12" 600# SS316L-F.G 2EA			
4		Ventilation / Safety clearance / Confined space en	Manway = 24", 600#, RF	Scaffolding Mate	MW1 MW2 Spiral wound gasket 24" 600# SS316L-F.G 2EA			
5		Internal cleaning of complete vessel	Bolt Size = 1 3/4"					
6		Inspection & Cleaning of demister & LG's, bridle of K.O. vessel						
7		Inspection						
8		Boxup & Deblinding, Housekeeping						
AB7	V-4404	Rich Amine Flash drum (Qty: 02 Nos.)			A Spiral wound gasket 16" 150# SS316L-F.G 1EA	2		
1	&	Blinding	ID 12 ft x 30 ft	Spanner Size = 4"	B D1 D2 E1 E2 F J K1 K2 K3 K4 L O R S1'8 U1'4 Spiral wound gasket 2" 150# SS316L-F.G 26EA			
2	V-5404	Water Circulation and flushing of vessel and column	Bolt Size = 1 1/4"	Scaffolding Mate	C Spiral wound gasket 8" 150# SS316L-F.G 1EA			
3		Opening of manways of vessel and column			G I N Q T1 T2 Spiral wound gasket 3" 150# SS316L-F.G 6EA			
4		Ventilation / Safety clearance / Confined space en	Manway = 24", 150#, RF		H P Spiral wound gasket 4" 150# SS316L-F.G 2EA			
5		Internal Inspection of vessel and column			M Spiral wound gasket 14" 150# SS316L-F.G 1EA			
6		Dismantling/removal of demisters & repair if any			MW1 MW2 MW3 Spiral wound gasket 24" 150# SS316L-F.G 3EA			
7		Cleaning of vessel, demisters, bridle & LG's.			HW Spiral wound gasket 8" 150# SS316L-F.G 1EA			
8		Re-installation of demisters						
9		Final inspection						
10		Boxup & Deblinding, Housekeeping						

OIL & GAS DEVELOPMENT COMPANY LIMITED								
KPD-TAY PLANT - ATA 2019 (MECHANICAL SCOPE OF WORK REGISTER)								
Act #	Tag #.	Job Description	Specifications	Tools Required	Remarks	QTY	Unit Price (exclusive of PST/ICT)	Total Price (exclusive of PST/ICT)
AB8	V-4406	<b>Amine Regenerator Reflux drum (Qty: 02 Nos.)</b>			A 18" 150# WN RF 01EA	2		
1	&	Blinding	ID 6.5 ft x 12 ft Length (TL/TL)		B 6" 150# WN RF 01EA			
2	V-5406	Opening of manways.			C E F1 F2 G H J1 J2 K1 K2 L1 L2 2" 150# WN RF 12EA			
3		Ventilation / Safety clearance / Confined space en	Manway = 24", 150#, RF.	Spanner Size = 6	A 12" 150# WN RF 01EA			
4		Internal Inspection of vessel	Bolt Size = 1 5/8"	Scaffolding Mate	4" 150# WN RF 01EA			
5		Dismantling/removal of demisters & repair if any			MW 24" 150# WN RF 01EA			
6		Cleaning of vessel, demisters, bridle & LG's.						
7		Re-installation of demisters						
8		Final inspection						
9		Boxup & Deblinding, Housekeeping						
AB9	V-4407	<b>Amine Drain drum (Qty: 02 Nos.)</b>			A Spiral wound gasket 8" 150# 316L-F.G. 1EA	2		
1	&	Blinding	ID 6.5 ft x 20 ft Length (TL/TL)		B C Spiral wound gasket 2" 300# 316L-F.G. 2EA			
2	V-5407	Opening of manways.			D E F G H K L M O P Spiral wound gasket 2" 150# 316L-F.G. 10EA			
3		Ventilation / Safety clearance / Confined space en	Manway =24", 150#, RF	Spanner Size = 4	I J Spiral wound gasket 4" 150# 316L-F.G. 2EA			
4		Internal Inspection of vessel and repair(if any)	Bolt Size = 1 1/4"	Scaffolding Mate	N Spiral wound gasket 20" 150# 316L-F.G. 1EA			
5		Cleaning of vessel, bridle & LG's.			MW Spiral wound gasket 24" 150# SS316L-F.G 1EA			
6		Final inspection						
7		Boxup & Deblinding, Housekeeping						
<b>GROUP-C: HEAT EXCHANGERS:-</b>								
AC1	E-4401	<b>Inlet Gas Trim Cooler (Qty: 02 Nos.)</b>			Test ring arrangement	2		
1	&	Scaffolding at Channel Head (pre-shutdown activity)	BEU-Horizontal (Shell and Tube)		Bundle pulling arrangement to be identified			
2	E-5401	Blinding	278 "U" Tubes x 0.62"(ID) x196.85" LG		Head Gaskets: (Special) Channel side: OD:42.83" ID: 40.08" THK:0.18" (Web In Middle) Tube Side: OD:42.83" ID: 40.08" THK:0.18" 01 each			
3		Dismantling of exchanger inlet and outlet nozzle connections		Spanner Size = 7	N1 N2 Spiral wound gasket 10" 600# SS316L-F.G 2EA			
4		Opening of Channel Head Cover		Scaffolding Mate	N3 N4 Spiral wound gasket 6" 150# SS316L-F.G 2EA			
5		Removal & Inspection of bundle	Shell ID = 40 in.		N5 Spiral wound gasket 2" 150# SS316L-F.G 1EA			
6		Cleaning of tubes & tube bundles by Water jetting	Bolt Size = 1 7/8"					
7		Cleaning of Shell and channel						
8		Insertion of Bundle						
9		Pressure / leak testing						
10		Boxup & Deblinding						
11		Removal of Scaffolding, Housekeeping						



OIL & GAS DEVELOPMENT COMPANY LIMITED								
KPD-TAY PLANT - ATA 2019 (MECHANICAL SCOPE OF WORK REGISTER)								
Act #	Tag #.	Job Description	Specifications	Tools Required	Remarks	QTY	Unit Price (exclusive of PST/ICT)	Total Price (exclusive of PST/ICT)
AC2	E-4403	<b>Treated Gas Trim Cooler (Qty: 02 Nos.)</b>			Test ring arrangement			
1	&	Scaffolding at Channel Head (pre-shutdown activity)	BEU-Horizontal (Shell and Tube)		Bundle pulling arrangement to be identified			
2	E-5403	Blinding	328 "U" Tubes x 0.584"(ID) x141.732" LG	Spanner Size = 67,48mm	Head Gaskets: <b>(Special)</b> Channel side: OD:40" ID: 37.24" THK:0.18" (Web In Middle) Tube Side: OD:40" ID: 37.24" THK:0.18" 01 each	2		
3		Dismantling of exchanger inlet and outlet nozzle connections		Scaffolding Mate	N1 N2 Spiral wound gasket 3" 150# SS316L-F.G 2EA			
4		Opening of Channel Head Cover		N3 N4 Spiral wound gasket 12" 600# SS316L-F.G 2EA				
5		Removal & Inspection of bundle	Shell ID = 36 in.	N5 N6 Spiral wound gasket 2" 600# SS316L-F.G 2EA				
6		Cleaning of tubes & tube bundles by Water jetting	Bolt Size = 1 3/4" , 1 1/4"					
7		Cleaning of Shell and channel						
8		Insertion of Bundle						
9		Pressure / leak testing						
10		Boxup & Deblinding						
11		Removal of Scaffolding, Housekeeping						
AC3	E-4406 A/B	<b>Amine Regenerator Reboiler (Qty: 01 No., only one will be attended)</b>			Test ring arrangement			
1	&	Scaffolding at Channel Head (pre-shutdown activity)	BKU-Horizontal (Shell and Tube)		Bundle pulling arrangement to be identified			
2	E-5406 A/B	Blinding	1646 "U" Tubes x 0.584"(ID) x196.85" LG		Head Gaskets: <b>(Special)</b> Channel side: (Web)OD:71.161" ID: 68.189" THK:0.175" Tube Side: OD:71.161" ID: 68.189" THK:0.175" 01 each	1 (only one will be attended)		
3		Dismantling of exchanger inlet and outlet nozzle connections		Spanner Size = 4	N1 N2 N3 N4 12" SPW 150# SS316L-F.G 04EA			
4		Opening of Channel Head Cover	Scaffolding Mate	N5 14" SPW 150# SS316L-F.G 01 EA				
5		Removal & Inspection of bundle	Shell ID = 68 in.	N6 N7 SPW 12" 300# SS316L-F.G 02EA				
6		Cleaning of tubes & tube bundles by Water jetting	Bolt Size = 1 1/4"	U1 L1 L2 L3 L4 2" 150# SS316L-F.G 05EA				
7		Cleaning of Shell and channel						
8		Insertion of Bundle						
9		Pressure / leak testing						
10		Boxup & Deblinding						
11		Removal of Scaffolding, Housekeeping						
AC4	E-4404 A/B/C	<b>Rich/Lean Amine Exchangers (Qty: 06 Nos.)</b>						
1	&	Scaffolding at both ends (pre-shutdown activity)	Plate & Frame Heat Exchanger					
2	E-5404 A/B/C	Cleaning of all 06 nos. strainer at inlet of lean and rich amine streams	Bolt Size = 1 1/4"			6		
3		Chemical cleaning of both lean and rich amine sides. Arrangements for chemical cleaning (i.e. pumps, tanks, temporary connection etc.						

OIL & GAS DEVELOPMENT COMPANY LIMITED								
KPD-TAY PLANT - ATA 2019 (MECHANICAL SCOPE OF WORK REGISTER)								
Act #	Tag #.	Job Description	Specifications	Tools Required	Remarks	QTY	Unit Price (exclusive of PST/ICT)	Total Price (exclusive of PST/ICT)
4		Pressure Testing			Spanner Size = 48mm			
5		Final Inspection			Scaffolding Material			
6		Boxup & Housekeeping						
AC5	EA-4401	<b>Lean Amine Air Cooler (Qty: 02 Nos.)</b>						
1	&	Scaffolding (Pre-S/down activity)	Fin Fan Cooler					
2	EA-5401	External cleaning of tubes and fins. Note: Tank and pump arrangement will be of contractor	No. of Tubes = 2208		Spanner Size = 48mm			
3		General inspection and preventive maintenance of condenser fans, fan blades, belts, pulleys, manual louvers and tube end plugs; including but not limited to complete external cleaning of rotors, tubes and fins, tightening of all structural bolts, rotor blade angle correction, blade deflection measurement, greasing of bearings (through greasing ports), pulleys alignment verification / correction and replacement of belts (conditional).	Tube ID = 0.7638"		Scaffolding Material	2		
4		Final Inspection	Tube Length = 326.77					
5		Boxup & Housekeeping	Bolt Size = 1 1/4"					
AC6	EA-4402	<b>Amine Regenerator Reflux Condenser (Qty: 02 Nos.)</b>						
1	&	Scaffolding (Pre-S/down activity)	Fin Fan Cooler					
2	EA-5402	External cleaning of tubes and fins. Note: Tank and pump arrangement will be of contractor	No. of Tubes = 920		Spanner Size = 48mm			
3		General inspection and preventive maintenance of condenser fans, fan blades, belts, pulleys, manual louvers and tube end plugs; including but not limited to complete external cleaning of rotors, tubes and fins, tightening of all structural bolts, rotor blade angle correction, blade deflection measurement, greasing of bearings (through greasing ports), pulleys alignment verification / correction and replacement of belts (conditional).	Tube ID = 0.834"		Scaffolding Material	2		
4		Final Inspection	Tube Length = 326.77					
5		Dismantling , cleaning and re-installation of strainers of Pumps.P-4402 A/B, P-5402A/B, P-4403 A/B/C, P-5403A/B/C, P-4404 A/B/C, P-5404A/B/C, P-4405A/B, P-5405A/B	Bolt Size = 1 1/4"					
6		Boxup & Housekeeping						
<b>GROUP-D: FILTERS:-</b>								
AD1	F-4401 A/B	<b>Lean Amine Filters (Qty: 04 Nos.)</b>						
1	&	Opening of top cover	I.D. of Vessel = ID 23.62 in		A B 6" 150# SPW RF 02EA			
2	F-5401 A/B	Removal of elements	Length of Vessel = 67.09 (TL/TL)		D1 D2 2" 150# SPW RF 02EA			
3		Internal cleaning of vessel	Filter Element Size = Dia 152.4 x 1016 mm		no of filter element installed per unit 05	4		
4		Interim Inspection	Filter Element Qty = 5		part no: HFU640UY020J			
5		Installation of new elements	Internal Material: SS 316L		filter element size: Ø152.4 x 1016 mm			
6		Final inspection						
7		Boxup & Housekeeping						

OIL & GAS DEVELOPMENT COMPANY LIMITED								
KPD-TAY PLANT - ATA 2019 (MECHANICAL SCOPE OF WORK REGISTER)								
Act #	Tag #.	Job Description	Specifications	Tools Required	Remarks	QTY	Unit Price (exclusive of PST/ICT)	Total Price (exclusive of PST/ICT)
ADZ	F-4402 A/B	Carbon Bed After Filters (Qty: 04 Nos.)						
1	&	Opening of top cover	I.D. of Vessel = ID 31.5 in		A B 6" 150# SPW RF 02EA	4		
2	F-5402 A/B	Removal of elements	Length of Vessel = 64.45 (TL/TL)		D1 D2 2" 150# SPW RF 02EA			
3		Internal cleaning of vessel	Filter Element Size = 5-1/2" O.D. x 36"		no of filter element installed per unit 12			
4		Interim Inspection	Filter Element Qty = 20		part no: HFUG40CAS010J			
5		Installation of new elements	Internal Material: SS 316L		filter element size: Ø152.4 x 1016 mm			
6		Final inspection						
7		Boxup & Housekeeping						
<b>GROUP-E: UTILITIES:-</b>								
AE1	H-8101 A/B/C	Hot Oil Heaters (Qty: 03 Nos.)			Manway 450 x 650 mm	3		
1		Erection of Scaffolding		Scaffolding Material	N1 1" 150# RF 01 EA			
2		Blinding	Heat Duty = 56	Spanner size = 21 m	N2 3" 150# RF 01 EA			
3		Opening of manways of radiant & convection section	Bolt Size = 5/8"		N3 N4 2" 150# RF 02 EA			
4		Internal inspection of radiant & convection section			N5 N6 10" 300# RF 02EA			
5		Cleaning of burners, radiant & combustion Chamber			N7 N8 2" 300# RF 02EA			
6		Inspection and Repair of refractory, if any			N9 2" 300# RF 01EA			
7		Preparation of manway(sheet) gaskets and boxup and deblinding			N10 3" 150# RF 01EA			
8		Dismantling, cleaning and re-installation of Suction strainers of Primary Hot Oil Pumps F-8101 A/B/C/D						
9		Dismantling, cleaning and re-installation of Suction strainers of Secondary Hot Oil Pumps F-8103 A/B/C/D						
AE2	CT-9801	COOLING TOWER			FILL SIZES LAYER 2 B1 105EA(1000*750*500(15 PIECES)) B2 06EA (1000*750*350(11 PIECES)) B3 09EA (1000*750*300(9 PIECES))B4 35EA(900*750*500(15 PIECES)) B5 02EA (1000*750*350(11 PIECES)) B6 03EA (900*750*300(9 PIECES))	1		
1		Cleaning/replacement of top water deck & nozzles			N1 N2 N3 N4 N5 8" 150# RF WN 05EA			
2		Cleaning of basin & pump suction pit			Fills and drift eliminators			
3		Repair of suction pit gate strainers, if any			4" 150# RF SPW INNER AND OUTER RING OF CS 20EA			
4		Inspection/cleaning/Installation of damaged/fallen fills,tower splash and drift eliminator etc. if any.			6" 150# RF SPW INNER AND OUTER RING OF CS 10EA			
5		General Inspection and preventive maintenance of tower fans, fan blades, belts and pulleys including complete external cleaning of rotors, tightening of all structural bolts, rotor blade angle correction, blade deflection measurement, pulleys alignment verification / correction and replacement of belts (conditional).			8" 150# RF SPW INNER AND OUTER RING OF CS 5EA			
6		Cleaning / repair of pump suction strainers			DRIFT ELIMINATORS SIZES (C1(12EA): 1000*500 C2(108EA): 950*500 C3(04EA): 1000*400 C4(36EA): 950*400			

OIL & GAS DEVELOPMENT COMPANY LIMITED								
KPD-TAY PLANT - ATA 2019 (MECHANICAL SCOPE OF WORK REGISTER)								
Act #	Tag #.	Job Description	Specifications	Tools Required	Remarks	QTY	Unit Price (exclusive of PST/ICT)	Total Price (exclusive of PST/ICT)
7		General cleaning of tower structure and area			FILLS SIZES LAYER 1 A1 84EA(1000*500*500(15 PIECES) A2 14EA(850*500*500(15 PIECES)) A3 42EA (900*500*500(15 PIECES)) A4 24EA(1000*500*400(12 PIECES) A5 04EA(850*500*400(12 PIECES)) A6 06EA (900*500*400(12 PIECES))			
<b>AE3</b>	<b>A-4301</b>	<b>CPI Separator</b>						
1		Opening of manways	Manhole: 24" 300# 02Nos.		N1 N10A/B N12 4" 150# WN RF 04EA	1		
2		Inspection and cleaning CPI plate packs			N2 6" 150# WN RF 01EA			
3		Internal cleaning of water, oil and sludge compartment i.e. removal of mud/slurry			N3 N5 N9A/B/C 3" 150# WN RF 05EA			
4		Final Inspection			N4 A/B/C/D N6 N8 A/B/C/D/E/F N11 2" 150# WN RF 11EA			
5		Box up & Housekeeping			MW 1/2 24" 300# WN RF			
6		Dismantling, cleaning and re-installation of suction strainers of Pumps P-4302A/B/C, P-4303 A/B, P-4304 A/B, P-4305, P- 8201A/B						
<b>AE4</b>	<b>V-8301</b>	<b>Close Drain Vessel</b>						
1		Blinding	Man Hole: 20", 150#, RF		A/D 4" 150# WN RF 02EA	1		
2		Opening of manways	ID 8 ft. x 24 ft. Length (TL/TL)		B/C/E/G 2" 150# WN RF 04EA			
3		Ventilation/Safety clearance			F1 F2 24" 150# WN RF 02EA			
4		Internal Inspection of vessel			MW 20" 150# WN RF 01EA			
5		Cleaning of vessel						
6		Box up & Housekeeping						
7		Deblinding						
<b>AE5</b>	<b>V-4301</b>	<b>Degasser Vessel</b>						
1		Blinding	Manway: 24", 150 #, RF		A/C: 3", 150 WNR, 01EA	1		
2		Opening of manways	ID: 1524mm		B1/B2/B3/ B4/D1/D2/E/G: 2", 150# WNR, 01EA			
3		Ventilation/Safety clearance	Length: 4572 (TL/TL)		F: 1/2", 3000#, NPT, 01No.			
4		Internal Inspection of vessel	Material: SA516, Gr 70					
5		Cleaning of vessel	Fluid: Produced Water					
6		Box up & Housekeeping						
7		Deblinding						
<b>AE6</b>	<b>V-7102</b>	<b>OVHD Compressor Suction Scrubber</b>						
1	<b>&amp;</b>	Blinding	Size: 30" ID x 102" TL/TL		A/B: 04", 300#, WNR, 01EA	2		
2	<b>V-7202</b>	Opening of manways	Material: SA-516, Gr70		C/D1/D2/E1/E2/F1/F2/G1/I1: 02", 300#, WNR, 01EA			
3		Ventilation/Safety clearance						
4		Internal Inspection of vessel						
5		Cleaning of vessel						
6		Box up & Housekeeping						
7		Deblinding						

OIL & GAS DEVELOPMENT COMPANY LIMITED								
KPD-TAY PLANT - ATA 2019 (MECHANICAL SCOPE OF WORK REGISTER)								
Act #	Tag #.	Job Description	Specifications	Tools Required	Remarks	QTY	Unit Price (exclusive of PST/ICT)	Total Price (exclusive of PST/ICT)
<b>DEHYDRATION UNIT (TRAIN-01 &amp; 02) - 02 UNITS:-</b>								
<b>GROUP-B: VESSELS:-</b>								
<b>DB1</b>	<b>V-4501</b>	<b>Molecular Sieve Inlet Scrubber (Qty: 02 Nos.)</b>						
1	&	Blinding	Vertical Vessel		M1 24" 600# SPW WN RF 01 N1 N2 12" 600# SPW WN RF 02EA	2		
2	V-5501	Opening of manways, dismantling of interconnecting piping.	ID 4.53 ft x 6.89 ft Length (TL/TL)	Spanner Size = 7"	N3 N5 N6 K1A K1B K2A K2B 2" 600# WN RF 07 EA			
3		Ventilation / Safety clearance / Confined space entry	I.D. of Manway = 24 in. 600# WN/RF 01 No.	Scaffolding Mate	N4 3" 600# SPW WN RF 01EA			
4		Internal Inspection of vessel	SA-516 Gr.70N (SS 304 L Internals)		Demister installed (detailed drawing not available)			
5		Cleaning of vessel internals, demisters, bridle & LG's.	Bolt Size = M 36					
6		Final inspection						
7		Boxup & Deblinding, Housekeeping						
<b>DB2</b>	<b>V-4503</b>	<b>Regeneration Gas Scrubber (Qty: 02 Nos.)</b>						
1	&	Blinding	Vertical Vessel		N1 N2 6" 600# WN RF 02EA N3/N5 K1A/B K2 A/B K3 A/B 2". 600# 08EA	2		
2	V-5503	Opening of manways, dismantling of interconnecting piping.	Size: OD 20 in x 9.09 ft. Length (TL/TL)	Spanner Size = 2" / 51mm	N4 4" 600# WN RF 01EA			
3		Ventilation / Safety clearance / Confined space entry		Scaffolding Mate	K1A/B K2A/B K3A/B Spiral wound gasket 2"-600 S5316L-F.G 6EA			
4		Internal Inspection of vessel	SA-516 Gr.70N (SS 304 L Internals)					
5		Cleaning of vessel internals, demisters, bridle & LG's.	Bolt Size = 1 3/8"					
6		Final inspection						
7		Boxup & Deblinding, Housekeeping						
<b>GROUP-C: HEAT EXCHANGERS:-</b>								
<b>DC1</b>	<b>E-4503</b>	<b>Feed Gas Cooler (Qty: 02 Nos.)</b>						
1	&	Scaffolding at Channel Head (pre-shutdown activity)	horizontal (Shell and Tube)		Scaffolding at both front and rear heads Fixed tubesheet	2		
2	E-5503	Dismantling of exchanger inlet and outlet nozzle connections	416 Tubes x 0.62"(ID) x143.7" LG	Spanner Size = 2" / 51mm	Tube side flange front gasket 634mm x 574 mm kamprofile AISI 304 FG 01EA			
3		Opening of Channel Head Cover		Scaffolding Mate	tube side flange rear gasket 634mm x 574 mm kamprofile AISI 304 FG 01EA			
4		Cleaning of tubes by water jetting			S1 S2 4" 150# SPW GASKET WN RF 02EA			
5		shell side water flushing and suitable chemical	Shell ID = 23.25 in.		S3 10" 150# SPW GASKET WN RF 01EA			
6		Cleaning of Shell and channel	Bolt Size = 1 3/8"		T1 T2 12" 600# SPW GASKET WN RF 02 EA			
7		Pressure/leak testing						
8		Box up						
9		Removal of Scaffolding & Housekeeping						

OIL & GAS DEVELOPMENT COMPANY LIMITED								
KPD-TAY PLANT - ATA 2019 (MECHANICAL SCOPE OF WORK REGISTER)								
Act #	Tag #.	Job Description	Specifications	Tools Required	Remarks	QTY	Unit Price (exclusive of PST/ICT)	Total Price (exclusive of PST/ICT)
DC2	E-4501	Regeneration Gas Pre-Heater (Qty: 02 Nos.)			Scaffolding at both front and rear heads	2		
1	&	Scaffolding at Channel Head (pre-shutdown activity)	Horizontal (Shell and Tube)		tube side gasket 841mm x 749mm x 5mm thickness kamprofile AISI 304 FG 01EA			
2	E-5501	Dismantling of exchanger inlet and outlet nozzle connections	540 Tubes x 0.584"(ID) x320.86" LG	Spanner Size = 57mm, 67mm, 75mm	shell side flange front gasket 841mm x 761mm x 5mm thickness kamprofile AISI 304 FG 01EA			
3		Opening of Channel Head Cover		Scaffolding Material	shell side flange head gasket 1012mm x 918mm x 5mm thickness kamprofile AISI 304 FG 01 EA			
4		Removal & Inspection of bundle			floating head gasket detail 740mm x 666mm x 5mm thickness 01EA			
5		Cleaning of tubes & tube bundles by Water jetting	Shell ID = 29.53 in.		S1 T1 T2 6" 900# GASKET WN RJ 03EA			
6		Cleaning of Shell and channel	Bolt Size = 1 1/2", 1 3/4", 1 7/8"		S2 8" 900# WN RJ 01EA			
7		Insertion of Bundle			Test ring arrangement			
8		Pressure/leak testing			Bundle pulling arrangement to be identified			
9		Box up						
10		Removal of Scaffolding & Housekeeping						
DC3	E-4502	Regeneration Gas Heater (Qty: 02 Nos.)			Scaffolding at one end U bundle	2		
1	&	Scaffolding at Channel Head (pre-shutdown activity)	BFU-Horizontal (Shell and Tube)		tube side gasket 523mm x 463mm X 5mm thickness kamprofile AISI 304 FG 01EA			
2	E-5502	Dismantling of exchanger inlet and outlet nozzle connections	93 "U" tubes x 0.584"ID x 170.08" LG	Spanner Size = 48mm	SHELL SIDE GASKET 523mm x 465mm x 5mm thickness kamprofile AISI 304 FG 01EA			
3		Opening of Channel Head Cover		Scaffolding Material	S1 6" 300# SPW GASKET WN RF 01EA			
4		Removal & Inspection of bundle			S2 4" 300# SPW GASKET WN RF 01EA			
5		Cleaning of tubes & tube bundles by Water jetting	Shell ID = 17.25 in.		S3 10" 300# SPW GASKET WN RF 01EA			
6		Cleaning of Shell and channel	Bolt Size = 1 1/4"		T1 T2 6" 900# GASKET WN RJ 02EA			
7		Insertion of Bundle			Test ring arrangement			
8		Pressure/leak testing			Bundle pulling arrangement to be identified			
9		Box up						
10		Removal of Scaffolding & Housekeeping						
DC4	EA-4501	Regeneration Gas Cooler (Qty: 02 Nos.)				2		
1	&	Scaffolding (Pre-S/down activity)	Fin Fan Cooler					
2	EA-5501	External cleaning of tubes and fins. Note: Tank and pump arrangement will be of contractor	264 Tubes x 0.834"(ID) x240" LG	Spanner Size = 51mm				
3		General inspection and preventive maintenance of condenser fans, fan blades, belts, pulleys and manual louvers.		Scaffolding Material				
4		Final Inspection						
5		Box up & Housekeeping	Bolt Size = 1 3/8"					

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KPD-TAY PLANT - ATA 2019 (MECHANICAL SCOPE OF WORK REGISTER)								
Act #	Tag #.	Job Description	Specifications	Tools Required	Remarks	QTY	Unit Price (exclusive of PST/ICT)	Total Price (exclusive of PST/ICT)
<b>GROUP-D: FILTERS:-</b>								
DD1	F-4501 A/B	Feed Gas Filter Coalscr (Qty: 04 Nos.)			M1 36" 600# SPW WN RF 01EA (SERIES B)	4		
1	&	Opening of top cover	I.D. of Vessel = ID 36 in		N1 N2 12" 600# SPW WN RF 02EA			
2	F-5501 A/B	Removal of elements	Length of Vessel = 14.64 ft. (TL/TL)	Spanner Size = 99mm	N3 N4 N5 K1A K1B K2A K2B K3 2" 600# SPW WN RF 08EA			
3		Internal cleaning of vessel	Filter Element Size = Dia 140 mm x 36"	Scaffolding Mate	ALL SPW GASKETS ARE GRAPHITE INNER AND OUTER SS 304			
4		Inspection of vane packs	Filter Element Qty = 14					
5		Installation of new elements	Internal Material: Fiberglass/ SS Material					
6		Final inspection	Bolt Size = 2 1/2"					
7		Box up & Housekeeping						
DD2	F-4502 A/B	Dry Gas Filter (Qty: 04 Nos.)			M1 24" WN RF 01EA	4		
1	&	Opening of top cover	I.D. of Vessel = ID 24 in		N1 N2 12" 600# SPW RF 02EA			
2	F-5502 A/B	Removal of elements	Length of Vessel = 14.64 ft. (TL/TL)	Spanner Size = 75mm	N3 N4 2" 600# SPW WN RF 02EA			
3		Internal cleaning of vessel	Filter Element Size = Dia 140 mm x 36"		N5 3" 600# SPW LWN RF 01EA			
4		Interim Inspection	Filter Element Qty = 8		K1 2" 600# SPW LWN RF 01EA			
5		Installation of new elements	Internal Material: Fiberglass/ SS Material		ALL SPW GASKETS ARE GRAPHITE INNER AND OUTER SS 304			
7		Final inspection	Bolt Size = 1 7/8"					
8		Box up & Housekeeping						
<b>LPG &amp; CONDENSATE RECOVERY UNIT (TRAIN-01 &amp; 02) - 02 UNITS:-</b>								
<b>GROUP-A: COLUMNS:-</b>								
LA1	C-4501	Inlet Gas Absorber (Qty: 02 No.)			N1 N4 10"-600# Spiral wound gasket WN RF 2EA	2		
1	&	Blinding	ID 78 in x 418 in length (TL/TL)		N2 3"-600# same as N1 note WN RF 1EA			
2	C-5501	Opening of manways.		Spanner Size = 75mm	N3/N5/N8/N9 L1A/B/C/D L2A/B 2"-600# WN RF 10EA			
3		Ventilation / Safety clearance	Packing	Scaffolding Mate	N6 4"-600# WN RF 1EA			
4		Initial Inspection	I.D. of Manway = 24", 600#, RF		N7 6"-600# same WN RF1EA			
5		Internal cleaning & Final inspection	Bolt Size = 1 7/8"		M1/M2 24"-600# Spiral wound gasket WN RF 2EA			

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KPD-TAY PLANT - ATA 2019 (MECHANICAL SCOPE OF WORK REGISTER)								
Act #	Tag #.	Job Description	Specifications	Tools Required	Remarks	QTY	Unit Price (exclusive of PST/ICT)	Total Price (exclusive of PST/ICT)
6		Box up & Deblinding, Housekeeping			H 12"-600# Spiral wound gasket WN RF			
					All gaskets are graphite with 316 SS strip.			
<b>LA2</b>	<b>C - 7101</b>	<b>Condensate Stabilizer Column (Qty: 02 Nos.)</b>						
1	&	Blinding	ID 36 in x 694 in length (TL/TL)		A 8"-600# Spiral wound gasket WN RF1EA			
2	C - 7201	Water / Chemical flushing and cleaning/inplace cleaning	No. of trays = 25	Spanner Size = 64mm	B/C/E/G/J/I1/12/K 2"-600# Spiral wound gasket WN RF8EA			
3		Opening of manways.		Scaffolding Mat	D 3"-600# Spiral wound gasket WN RF 1EA			
4		Ventilation / Safety clearance / Confined space entry	I.D. of Manway = 20" 600# WN/RF 04 Nos.		F/L 4"-600# Spiral wound gasket WN RF 2EA	2		
5		Initial Inspection	Bolt Size = 1 5/8"		H 6"-600# Spiral wound gasket WN RF 1EA			
6		M.Cleaning of Column Shell internal,vortex breaker,distributor, bridle & LG's etc.			M1/M2/M3/M4 20" 600 Spiral wound gasket WN RF 4EA			
7		Final inspection			All gaskets are graphite with 316 SS strip.			
8		Box up & Deblinding, Housekeeping						
<b>LA3</b>	<b>C - 4502</b>	<b>De-Ethimizer Column (Qty: 02 Nos.)</b>						
1	&	Blinding	ID 56/64 in x 1166 in length (TL/TL)		N1 N2 3"-600# Spiral wound gasket WN RF 02EA			
2	C - 5502	Water / Chemical flushing and cleaning/inplace cleaning		Spanner Size = 75mm	N3/N6/N8/N11/N13/N14/N15/N15/N17 2"-600# WN RF 09EA			
3		Opening of manways.	No. of trays = 42	Scaffolding Mat	N4/N5/N7/N10/N12 6"-600# WN RF 05EA			
4		Ventilation / Safety clearance / Confined space entry	I.D. of Manway = 24", 600#, RF 05 Nos.		M1-6 24" 600# WN RF 06EA	2		
5		Initial Inspection	Bolt Size = 1 7/8"		All gaskets are graphite with 316 SS strip.			
6		M.Cleaning of Column Shell internal,vortex breaker,distributor, bridle & LG's etc.						
7		Final inspection						
8		Box up & Deblinding, Housekeeping						



OIL & GAS DEVELOPMENT COMPANY LIMITED								
KPD-TAY PLANT - ATA 2019 (MECHANICAL SCOPE OF WORK REGISTER)								
Act #	Tag #.	Job Description	Specifications	Tools Required	Remarks	QTY	Unit Price (exclusive of PST/ICT)	Total Price (exclusive of PST/ICT)
LA4	C - 4503	De-Butanizer Column (Qty: 02 Nos.)			N1 3" 300# Spiral wound gasket 01EA	2		
1	&	Blinding	ID 48 in x 1012 in length (TL/TL)		N2/N10 6"-300# WN RF 02 EA			
2	C - 5503	Opening of manways.		Spanner Size = 57mm	N4/N5/N8 4"-300# WN RF 03EA			
3		Ventilation / Safety clearance / Confined space en	No. of trays = 36	Scaffolding Mate	N3/N6/N9/N11/N12/N13/N14 2"-300# WN RF 07EA			
4		Initial Inspection	I.D. of Manway = 24", 300#, RF 05 Nos.		M1/M2/M3/M4/M5 24" 300 WN RF			
5		Inplace Cleaning of all trays	Bolt Size = M 39		All gaskets are graphite with 316 SS strip.			
6		M.Cleaning of Column Shell internal, vortex breaker,distributor, bridle & LG's etc.						
7		Final inspection						
8		Box up & Deblinding, Housekeeping						
<b>GROUP-B: VESSELS:-</b>								
LB1	V-7101	Condensate Flash Separator (Qty: 02 Nos.)			(7) 4" 300# Spiral wound gasket SS316L/FG 1EA	2		
1	&	Blinding	Horizontal Vessel		(12) 2" 300# Spiral wound gasket SS316L/FG 16EA			
2	V-7201	Opening of manways.	Size: ID 36 in x 132 in Length (TL/TL)	Spanner Size = 48 mm	(23) 3" 300# Spiral wound gasket SS316L/FG 1EA			
3		Vessel and water boot flushing with water	I.D. of Manway = 20 in. 300# WN/RF 01 No.	Scaffolding Mate	MW 20" 300# Spiral wound gasket SS316L/FG 1EA			
4		Ventilation / Safety clearance / Confined space en	Bolt Size = 1 1/4"					
5		Internal Inspection of vessel						
6		Cleaning of vessel internals, bridle & LG's.						
7		Final inspection						
8		Box up & Deblinding, Housekeeping						
LB2	V-4504	Low Temperature Separator (Qty: 02 Nos.)			MANWAY M1 24" 900# WN RJ 01EA	2		
1	&	Blinding	Vertical Vessel		N1 12" 900# WN RJ 01EA			
2	V-5504	Opening of manways.	Size: 63" (1600mm) ID x 206" (5232.4mm) (TL/TL)	Spanner Size = 99 mm	N2 8" 900 WN RJ 01EA			
3		Ventilation / Safety clearance / Confined space en	I.D. of Manway = 24 in. 900# WN/RF 01 No.	Scaffolding Mate	N3 3" 900# WN RJ 01EA			
4		Internal Inspection of vessel	Bolt Size = 2 1/2"		N4 4" 900# WN RJ 01EA			
5		Final inspection			N5(a-b) N6(a-b) N7(a-b) 2" 900# WN RJ 06EA			
6		Box up & Deblinding, Housekeeping			N8 N9 N10 2" 900# WN RJ 03EA			
					ALL GASKETS ARE OF SS 316L			

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KPD-TAY PLANT - ATA 2019 (MECHANICAL SCOPE OF WORK REGISTER)								
Act #	Tag #.	Job Description	Specifications	Tools Required	Remarks	QTY	Unit Price (exclusive of PST/ICT)	Total Price (exclusive of PST/ICT)
<b>LB3</b>	<b>V-4506</b>	<b>De-Butanizer Reflux Drum (Qty: 02 Nos.)</b>						
1	&	Blinding			(6) Spiral wound gasket 2" 300# SS 316L-F.G 10EA	2		
2	<b>V-5506</b>	Opening of manways.	Size: ID 48 in x 168 in Length (TL/TL)	Spanner Size = 57 mm	(17) Spiral wound gasket 3" 300# SS 316L-F.G 1EA			
3		Ventilation / Safety clearance / Confined space en	I.D. of Manway = 24", 300#, RF	Scaffolding Mate	(22) Spiral wound gasket 4" 300# SS 316L-F.G 1EA			
4		Internal Inspection of vessel	Bolt Size = 1 1/2"		(33) Spiral wound gasket 6" 300# SS 316L-F.G 1EA			
5		Cleaning of vessel, bridle & LG's.			MW 24" 300# Spiral wound gasket SS316L/FG 1EA			
6		Final inspection			ALL GASKETS ARE WELD NECK RF			
7		Box up & Deblinding, Housekeeping						
<b>GROUP-C: HEAT EXCHANGERS:-</b>								
<b>LC1</b>	<b>E-7101</b>	<b>Stabilizer Re-Boiler (Qty: 02 Nos.)</b>			Test ring arrangement	2		
1	&	Scaffolding at Channel Head (pre-shutdown activity)	BKU-Horizontal (Shell and Tube)		Bundle pulling arrangement to be identified			
2	<b>E7201</b>	Blinding	140 "U" Tubes x 0.584"(ID) x144" LG	Spanner Size = 38 mm	Channel side (Left gasket) 699OD x 629ID (WEB) <b>Special</b>			
3		Dismantling of exchanger inlet and outlet nozzle connections		Scaffolding Mate			Shell side (Right gasket) 699OD x 629ID <b>Special</b>	
4		Opening of Channel Head Cover			A C D E 6" 600# SPW WN RF 04EA			
5		Removal & Inspection of bundle	Shell ID = 48 in.		B 3" 600# SPW WN RF 01EA			
6		Cleaning of tubes & tube bundles by Water jetting	Bolt Size = 1"		F1 F2 G1 G2 I J 2" 600# SPW WN RF 06EA			
7		Cleaning of Shell and channel, mechanical cleaning of tubes						
8		Insertion of Bundle						
9		Pressure/leak testing						
10		Box up & deblinding.						
11		Removal of Scaffolding & Housekeeping						

OIL & GAS DEVELOPMENT COMPANY LIMITED								
KPD-TAY PLANT - ATA 2019 (MECHANICAL SCOPE OF WORK REGISTER)								
Act #	Tag #.	Job Description	Specifications	Tools Required	Remarks	QTY	Unit Price (exclusive of PST/ICT)	Total Price (exclusive of PST/ICT)
LC2	E-4507	<b>De-Butanizer Reboiler (Qty: 02 Nos.)</b>						
1	&	Scaffolding at Channel Head (pre-shutdown activity)	BKU-Horizontal	(Shell and Tube)	Test ring arrangement	2		
2	E-5507	Blinding		Spanner Size = 34 mm	Bundle pulling arrangement to be identified			
3		Dismantling of exchanger inlet and outlet nozzle connections	194 "U" Tubes x 0.584"(ID) x144' LG	Scaffolding Mate	Channel side (Left gasket) 776OD x 716ID (WEB) <b>Special</b>			
4		Opening of Channel Head Cover			Shell side (Right gasket) 776OD x 716ID <b>Special</b>			
5		Removal & Inspection of bundle	Shell ID = 28 in.		N1 N2 6" 300# SPW WN RF 02 EA			
6		Cleaning of tubes & tube bundles by Water jetting	Bolt Size = 7/8"		N4 N3 4" 300# SPW WN RF 02 EA			
7		Cleaning of Shell and channel, mechanical cleaning of tubes			N5 3" 300# SPW WN RF 01 EA			
8		Insertion of Bundle			N7A N7B N8A N8B N9 N10 2" 300# SPW WN RF 06 EA			
9		Pressure/leak testing						
10		Box up & deblinding.						
11		Removal of Scaffolding & Housekeeping						
LC3	EA-4501	<b>De-Butanizer Overhead Condenser (Qty: 02 Nos.)</b>						
1	&	Scaffolding (Pre-S/down activity)	Fin Fan Cooler			2		
2	EA-5501	External cleaning of tubes and fins. Note: Tank and pump arrangement will be contractor's responsibility		Scaffolding Material				
3		General inspection and preventive maintenance of condenser fans, fan blades, belts, pulleys, manual louvers and tube end plugs; including but not limited to complete external cleaning of rotors, tubes and fins, tightening of all structural bolts, rotor blade angle correction, blade deflection measurement, replacement of gearbox shaft oil seals, flushing of gearbox and refilling of fresh oil.	552 Tubes x 0.782"(ID) x413.38" LG					
4		Final Inspection & box up						
5		Removal of Scaffolding & Housekeeping						
LC4	EA-4502	<b>Condensate Cooler (Qty: 02 Nos.)</b>						
1	&	Scaffolding (Pre-S/down activity)	Fin Fan Cooler			2		
2	EA-5502	External cleaning of tubes and fins. Note: Tank and pump arrangement will be contractor's responsibility						
3		General inspection and preventive maintenance of condenser fans, fan blades, belts, pulleys, manual louvers and tube end plugs; including but not limited to complete external cleaning of rotors, tubes and fins, tightening of all structural bolts, rotor blade angle correction, blade deflection measurement, replacement of gearbox shaft oil seals, flushing of gearbox and refilling of fresh oil.	368 Tubes x 0.782"(ID) x19.685" LG	Scaffolding Material				
4		Final Inspection & box up						
5		Removal of Scaffolding & Housekeeping						

OIL & GAS DEVELOPMENT COMPANY LIMITED								
KPD-TAY PLANT - ATA 2019 (MECHANICAL SCOPE OF WORK REGISTER)								
Act #	Tag #.	Job Description	Specifications	Tools Required	Remarks	QTY	Unit Price (exclusive of PST/ICT)	Total Price (exclusive of PST/ICT)
LC5	E-4503	Inlet Gas Multi-pass Heat Exchanger (Qty: 02 Nos.)			Gaskets for blast purging	2		
1	&	Scaffolding at both ends (pre-shutdown activity)	Plate & Frame Heat Exchanger					
2	E-5503	Dismantling, removal, cleaning and re-installation of dry gas inlet line strainer.		Scaffolding Material				
3		Back blast purging of dry gas inlet stream with N2 and subsequent re-instatement for normal operation.						
4		Final inspection & box up						
5		Removal of Scaffolding & Housekeeping						
LC6	E-4506	De-Ethimizer Overhead condenser (Qty: 02 Nos.)				2		
1	&	Scaffolding at both ends (pre-shutdown activity)	Plate & Frame Heat Exchanger					
2	E-5506	Back blast purging of dry gas inlet stream with N2 and subsequent re-instatement for normal operation.		Scaffolding Material				
3		Final inspection						
4		Box up, Rempval of Scaffolding & Housekeeping						
5		Dismantling, cleaning and re-installation of suction strainers of P-4501 A/B, P-4502 A/B, P-4503 A/B						
<b>GROUP-D: FILTERS:-</b>								
LD1	F-7101 A/B	Condensate Filters (Qty: 04 Nos.)			a/b 3"-300# Spiral wound gasket graphite 02EA	4		
1	&	Opening of top cover	I.D. of Vessel = ID 9.75 in		c/d/e/f 2"-300# Spiral wound gasket graphite 04EA			
2	F-7201 A/B	Removal of elements	Length of Vessel = 5.158 ft. (TL/TL)	Spanner Size = 38 mm	10" 300# WN RF 01EA			
3		Internal cleaning of vessel		Scaffolding Material				
4		Interim Inspection	Filter Element Qty = 3					
5		Installation of new elements	Bolt Size = 1"					
6		Final inspection						
7		Box up & Housekeeping						
LD2	F-7102 A/B	Condensate Filter Coalscer (Qty: 04 Nos.)			A/D 3"-300# WN RF Spiral wound gasket Graphite 02EA	4		
1	&	Opening of Side Cover			F/G/H/I 2"-300# WN RF Spiral wound gasket Graphite 04EA			
2	F-7202 A/B	Removal of elements		Spanner Size = 43 mm	B1/B2/C/K/I 2"-300# WN RF Spiral wound gasket Graphite 05EA			
3		Internal cleaning of vessel	Horizontal Vessel	Scaffolding Mate	E1/E2 2"-300# WN RF Spiral wound gasket Graphit 02EA			
4		Interim Inspection	Filter Element Qty = 4		L1/L2 2"-300# WN RF Spiral wound gasket Graphite 02EA			
5		Installation of new elements	Bolt Size = 1 1/8"		M1/M2 2"-300# WN RF Spiral wound gasket Graphite 02EA			
6		Final inspection			14" 300# WN RF 316L/FG 01EA			
7		Box up & Housekeeping						

OIL & GAS DEVELOPMENT COMPANY LIMITED								
KPD-TAY PLANT - ATA 2019 (MECHANICAL SCOPE OF WORK REGISTER)								
Act #	Tag #.	Job Description	Specifications	Tools Required	Remarks	QTY	Unit Price (exclusive of PST/ICT)	Total Price (exclusive of PST/ICT)
<b>MANUAL VALVES(seat passing problems)</b>								
S.#	EQUIP. NAME	EQ.TAG.NO	SCRIPTION/LOCAT	VALVE TAG	TYPE/SIZE/RATING	QTY	Unit Rate	Total Price
<b>DEHYDRATION-TRAIN-I VALVES:-</b>								
1	Regeneration Gas Co	K-4501 A	Suction Valve	VB-222	Ball Valve(Flanged), 4" x 600#	2		
2	Molecular Sieve Drie	V-4502A	ream valve of BDV	VB-232	Ball Valve(Flanged), 4" x 900#	1		
3	PDIT-4504 Downstre	PDIT-4504	Downstream Valve		SW, 1/2", 600#	1		
4	By-pass Valve of LCV	LCV-4501	By-pass Valve		Ball Valve(Flanged), 4"x 600#	1		
				DEHY-T-I	<b>Total Valves</b>	<b>5</b>		
<b>DEHYDRATION-TRAIN-II VALVES:-</b>								
1	Regeneration Gas Co	K-5501 B	Suction Valve	VB-222	Ball Valve(Flanged), 4" x 600#	2		
2	PDIT-5504 up/down	PDIT-5504	Isolation Vlve		SW, 1/2", 600#	1		
3	Regeneration Gas Co	K-5501 B	Discharge valves		Ball Valve(Flanged), 4"x 600#	1		
				DEHY-T-I	<b>Total Valves</b>	<b>4</b>		
<b>LPG AND CONDENSATE RECOVERY UNIT-TRAIN-I VALVES:-</b>								
1	Aborber Bottom Pur	P-4501A/B	Suction valves	VB-216	Ball Valve(Flanged), 6"x 300#	2		
2	Aborber Bottom Pur	P-4501A/B	Discharge valves	VB-216	Ball Valve(Flanged), 4"x 300#	2		
3	De-C2 Reflux pump	P-4502A/B	Suction valves	VB-216	Ball Valve(Flanged), 6"x 300#	2		
4	De-C2 Reflux pump	P-4502A/B	Discharge valves	VB-216	Ball Valve(Flanged), 4"x 300#	2		
5	De-C4 Reflux drum p	P-4503 A/B	Suction Valves	VB-211	Ball Valve(Flanged), 6"x 300#	2		
6	Multi pass heat exch	E-4503	ream valve of ESDV	VB-221	Ball Valve(Flanged), 12"x 600#	1		
7	Aborber Bottom Pur	P-4501B	NRV at Discharge		Ball Valve(Flanged), 4"x 300#	1		
8	Turbo Train-1	TE-4501	Drain valve (Expander side)		SW, 3/4", 600#	1		
				LPG-T-I	<b>Total Valves</b>	<b>13</b>		
<b>LPG AND CONDENSATE RECOVERY UNIT-TRAIN-II VALVES:-</b>								
1	Aborber Bottom Pur	P-5501A/B	Suction valves	VB-216	Ball Valve(Flanged), 6"x 300#	2		
2	Aborber Bottom Pur	P-5501A/B	Discharge valves	VB-216	Ball Valve(Flanged), 4"x 300#	2		
3	De-C2 Reflux pump	P-5502A/B	Suction valves	VB-216	Ball Valve(Flanged), 6"x 300#	2		
4	De-C2 Reflux pump	P-5502A/B	Discharge valves	VB-217	Ball Valve(Flanged), 4"x 300#	2		
5	De-C4 Reflux drum p	P-5503 A/B	Suction Valves	VB-211	Ball Valve(Flanged), 6"x 300#	2		
6	De-C4 Reflux drum p	P-5503 A/B	Discharge Valves		Ball Valve(Flanged), 4"x 300#	2		
7	De-C2 Reflux pump	P-5502A/B	Recycle Valves		SW, 1", 300#	1		
8	Aborber Bottom Pur	P-5501A	NRV at Discharge		Ball Valve(Flanged), 4"x 300#	1		
9	Aborber Bottom Pur	P-5501A/B	Drain valve at common line		SW, 3/4", 300#	1		
10	Aborber Bottom Pur	P-5501	Recycle Valves		Ball Valve(Flanged), 4"x 300#	1		
				LPG-T-II	<b>Total Valves</b>	<b>16</b>		
<b>UTILITIES (COOLING TOWER/ HOT OIL ):-</b>								
1	Cooling tower	CT-9801	V-9804 Isolating va	VB-201	Ball Valve(Flanged), 6" x 150#	2		
2	Secondary Hot Oil P	P-8103A/B/C	Suction valves	VB-211	Ball Valve(Flanged), 20"x 300#	2		
				UTILITIES	<b>Total Valves</b>	<b>4</b>		
<b>Scope Of Work:</b>								
Dismantling, lifting, shifting, testing, repair, re-testing and re-installation to be carried out by contractor with compatible tools & tackles/precision lathe machines.								
Material for seats repairing like teflon, SS will be provided/arranged by contractor. OGDCL will provide special kits only.								

OIL & GAS DEVELOPMENT COMPANY LIMITED								
KPD-TAY PLANT - ATA 2019 (MECHANICAL SCOPE OF WORK REGISTER)								
Act #	Tag #.	Job Description	Specifications	Tools Required	Remarks	QTY	Unit Price (exclusive of PST/ICT)	Total Price (exclusive of PST/ICT)
<b>MODIFICATION JOBS</b>								
Sr#	ECR #	Modification Description	Pipe Size & Spec	Material	Detail of scope	Dia Inches	Unit Rate	Total Price
1	KT-ECR-1003	Provision of 2" new line from dry gas to De-ethanizer column at upstream of over head line 6" NR.V. (for hot purging & column pressurization)	2", SS 316 / CS, SS316L 10S / CS Sch 80	Bidder scope include cutting, fabrication, welding, DPT, Installation of supports where required and lifting / shifting etc. Bidder shall arrange all welding equipment, plant, consumables required for fabrication & welding. DPT shall also be carried out by bidder however any other NDT like RT, MPI, PMI shall be arranged by OGDCL.		8 Dia Inches SS 316 + 17 Dia Inches CS approx.		
2	KT-ECR-1004	Installation of isolation valve for o/h gas from deethanizer reflux drum to mpx inlet.	6", SS 316, Sch 80			12		
3	KT-ECR-1005	Drainage of Regeneration Gas Liquid to CPI System from Dehyd	2", CS, Sch 80			34		
4	KT-ECR-1006	Close drain modification of Production Separators and Slug Catchers K- Slug Catcher SC-4101 K-Test Separator V-3201 K-Prod Separator V-4201 T-Prod Separator V-5201 T-Slug Catcher SC-5101	2", CS, Sch 80			8		
5	KT-ECR-1007	Relocation of nitrogen generation package from Sinjhoroto to KPD	2", CS, Sch 80 3", CS, Sch 80			85 35		
6	KT-ECR-1044	Installation of new TAY-separator (Capacity: 40 MMSCFD)	8" 6" 4" 2" 1" Materil CS/Galv. CS Sch 80 for all above sizes			24 12 8 26 5		
7	(TBP)	Dehydration Train-2 Tie-in with early facility Train-1. New isolation valve installation on return line.	12", CS, Sch 80			120		
8	KT-ECR-1008	Modification required for cold flare line re-location	8", SS 316, Sch 10S			64		
9	KPD-MOC-MEC-019	Sale gas PCV 14" line Installation	14", CS Sch 80 10", CS Sch 80			28 40		
10	(TBP)	Tie-ins (Size: 03", 02 Nos) of Incinerator (Closed Drain & Fuel Gas)	3", CS Sch 80			18		
11	(TBP)	Tie ins for installation of sample probe of newly procured moisture analyzer	1", CS, Sch 80			1		
12	(TBP)	Installation of PSV/PCV before K/T Slug Cather Inlet ESDVs	4", CS, Sch 80 6", CS, Sch 80 6", Low Tepmt CS, Sch 80 8", Low Tepmt CS, Sch 40			12 18 18 24		
All tools, consumables & equipments for executing the above mentioned jobs will be in contractor's scope. Spanner sizes are mentioned only for facilitations.								
<b>Total in PKR (exclusive of PST/ICT)</b>								

## Electrical Section Work Scope / Job List For ATA-2019 of KPD-TAY Palnt.

Amine Unit Train-1										
List S.No.	Unit S.No.	Description	Tag No.	Bearing		Job Description /Scope	Quantity	Unit Price (exclusive of PST/ICT)	Total Price (exclusive of PST/ICT)	
				DE	NDE					
1	1	Amine Charge Pump	P-4404B	6222 /C3	NU218	Inspection, checking, cleaning, Dismantling, Shifting, greasing, meggering, ,bearing replacement (if required), re-installation, alignment, commissioning and testing for smooth operation and parameters recording and submission of record in binder form.	1			
2	2	500KW, 6600V, 50HZ, RPM: 2984, 49.9A	P-4404C	6222 /C3	NU218		1			
3	3	Amine Booster Pump	P-4403A	6314	6314		1			
4	4	55KW, 400V, 50HZ, RPM: 2975, 95.7A	P-4403B	6314	6314		1			
5	5	Amine Circulation Pump	P-4402A	6314	6314		1			
6	6	75KW, 400V, 50HZ, RPM: 2980, 129.7A	P-4402B	6314	6314		1			
7	7	Amine Regen Reflux Pump	P-4405A	6308 2Z	6308 2Z		1			
8	8	Amine Drain Pump	P-4407	6309	6309		1			
9	9	Lean Amine Air Cooler Fan 30KW, 400V, 50HZ, RPM: 985, 61.7A	EA-4401 FA2	6313/C3	6312/C3		1			
10	10		EA-4401 FA3	6313/C3	6312/C3		1			
11	11		EA-4401 FA4	6313/C3	6312/C3		1			
12	12		EA-4401 FA5	6313/C3	6312/C3		1			
13	13		EA-4401 FA6	6313/C3	6312/C3		1			
14	14		EA-4401 FA7	6313/C3	6312/C3		1			
15	15		EA-4401 FA8	6313/C3	6312/C3		1			
16	16		Reflux Condenser Cooler Fan 30KW, 400V, 50HZ, RPM: 985, 61.7A	EA-4402 FA1	6313/C3		6312/C3	1		
17	17			EA-4402 FA2	6313/C3		6312/C3	1		
18	18	EA-4402 FA3		6313/C3	6312/C3		1			
19	19	EA-4402 FA4		6313/C3	6312/C3		1			
20	20	Amine Charge Pump	P-4404A	6222 /C3	NU218	Inspection, checking, cleaning, greasing, meggering and testing for smooth operation and parameters recording and submission of record in binder form.	1			
21	21	Amine Booster Pump	P-4403C	6314	6314		1			
22	22	Amine Regen Reflux Pump	P-4405B	6308 2Z	6308 2Z		1			
23	23	Lean Amine Air Cooler Fan	EA-4401 FA1	6313/C3	6312/C3		1			
Amine Unit Train-2										
24	1	Amine Charge Pump	P-5404A	6222/C3	NU218	Inspection, checking, cleaning, Dismantling, Shifting, greasing, meggering, ,bearing replacement (if required), re-installation, alignment, commissioning and testing for smooth operation and parameters recording and submission of record in binder form.	1			
25	2	500KW, 6600V, 50HZ, RPM: 2984, 49.9A	P-5404B	6222/C3	NU218		1			
26	3	Amine Booster Pump	P-5403A	6314	6314		1			
27	4	55KW, 400V, 50HZ, RPM: 2975, 95.7A	P-5403B	6314	6314		1			
28	5		P-5403C	6314	6314		1			
29	6	Amine Circulation Pump	P-5402B	6314	6314		1			
30	7	Amine Regen Reflux Pump	P-5405A	6308 2Z	6308 2Z		1			
31	8	5.5KW, 400V, 50HZ, RPM: 2900, 10.4A	P-5405B	6308 2Z	6308 2Z		1			
32	9	Amine Drain Pump	P-5407	6309	6309		1			
33	10	Lean Amine Air Cooler Fan	EA-5401 FA1	6313/C3	6312/C3		1			
34	11		EA-5401 FA2	6313/C3	6312/C3		1			
35	12		EA-5401 FA3	6313/C3	6312/C3		1			
36	13		EA-5401 FA4	6313/C3	6312/C3		1			

37	14	30KW, 400V, 50HZ, RPM: 985, 61.7A	EA-5401 FA5	6313/C3	6312/C3		1			
38	15		EA-5401 FA6	6313/C3	6312/C3		1			
39	16		EA-5401 FA7	6313/C3	6312/C3		1			
40	17		EA-5401 FA8	6313/C3	6312/C3		1			
41	18		Reflux Condenser Cooler Fan30KW, 400V, 50HZ, RPM: 985, 61.7A	EA-5402 FA2	6313/C3		6312/C3	1		
42	19			EA-5402 FA3	6313/C3		6312/C3	1		
43	20			EA-5402 FA4	6313/C3		6312/C3	1		
44	21	Amine Charge Pump 500KW, 6600V, 50HZ, RPM: 2984, 49.9A	P-5404C	6222/C3	NU218	Inspection, checking, cleaning, greasing, meggering and testing for smooth operation and parameters recording and submission of record in binder form.	1			
45	22	Amine Circulation Pump 75KW, 400V, 50HZ, RPM: 2980, 129.7A	P-5402A	6314	6314		1			
46	23	Reflux Condenser Cooler Fan30KW, 400V, 50HZ, RPM: 985, 61.7A	EA-5402 FA1	6313/C3	6312/C3		1			
<b>LPG Recovery &amp; Gas Processing Unit Train-1</b>										
47	1	Stabilizer Overhead Compressor 90KW, 400V, 50HZ, RPM: 1480, 165.5A	KCP32-A	6316/C3	6316/C3	Inspection, checking, cleaning, Dismantling, Shifting, greasing, meggering, ,bearing replacement (if required), re-installation, alignment, commissioning and testing for smooth operation and parameters recording and submission of record in binder form.	1			
48	2	De-Ethanizer Reflux Pump 15kW, 400V, 50Hz, RPM: 2920, 27.4A	P-4502-A	6309/C3	6309/C3		1			
49	3	De-Butanizer Reflux Pump 30kW, 400V, 50Hz, RPM: 2955, 52.8A	P-4503-B	6312/C3	6310/C3		1			
50	4	Absorber Pump	P-4501-A	6309/C3	6309/C3		1			
51	5	15kW, 400V, 50Hz, RPM: 2920, 27.4A	P-4501-B	6309/C3	6309/C3		1			
52	6	Turbo Expander Motor	TER-4501A	6207-ZZ	6206-ZZ		1			
53	7	2.2kW, 400V, 50Hz, RPM: 2895, 4.17A	TER-4501B	6207-ZZ	6206-ZZ		1			
54	8	Fan Cooler-1	EA4501-A	6315/C3	6313/C3		1			
55	9	37kW, 400V, 50Hz, RPM: 975, 70.8A	EA4501-B	6315/C3	6313/C3		1			
56	10	Fan Cooler 37kW, 400V, 50Hz, RPM: 975	EA4502	6315/C3	6313/C3		1			
57	11	Stabilizer Overhead Compressor 90KW, 400V, 50HZ, RPM: 1480, 165.5A	KCP32-B	6316/C3	6316/C3	Inspection, checking, cleaning, greasing, meggering and testing for smooth operation and parameters recording and submission of record in binder form.	1			
58	12	De-Ethanizer Reflux Pump 15kW, 400V, 50Hz, RPM: 2920, 27.4A	P-4502-B	6309/C3	6309/C3		1			
59	13	De-Butanizer Reflux Pump 30kW, 400V, 50Hz, RPM: 2955, 52.8A	P-4503-A	6312/C3	6310/C3		1			
<b>LPG Recovery &amp; Gas Processing Unit Train-2</b>										
60	1	Stabilizer Overhead Compressor	KCP32C	6316/C3	6316/C3	Inspection, checking, cleaning, Dismantling, Shifting, greasing, meggering, ,bearing replacement (if required), re-installation, alignment, commissioning and testing for smooth operation and parameters recording and submission of record in binder form.	1			
61	2	90KW, 400V, 50HZ, RPM: 1480, 165.5A	KCP32D	6316/C3	6316/C3		1			
62	3	De-Ethanizer Reflux Pump-A 15kW, 400V, 50Hz, RPM: 2920, 27.4A	P-5502A	6309/C3	6309/C3		1			
63	4	De-Butanizer Reflux Pump-A 30kW, 400V, 50Hz, RPM: 2955, 52.8A	P-5503B	6312/C3	6310/C3		1			
64	5	Absorber Pump	P-5501A	6309/C3	6309/C3		1			
65	6	15kW, 400V, 50Hz, RPM: 2920, 27.4A	P-5501B	6309/C3	6309/C3		1			
66	7	Turbo Expander Motor	TER-5501A	6207-ZZ	6206-ZZ		1			
67	8	2.2kW, 400V, 50Hz, RPM: 2895, 4.17A	TER-5501B	6207-ZZ	6206-ZZ		1			
68	9	Fan Cooler-1	EA5501A	6315/C3	6313/C3		1			
69	10	37kW, 400V, 50Hz, RPM: 975, 70.8A	EA5501B	6315/C3	6313/C3		1			
70	11	Fan Cooler 37kW, 400V, 50Hz, RPM: 975	EA5502	6315/C3	6313/C3		1			
71	12	De-Ethanizer Reflux Pump-A 15kW, 400V, 50Hz, RPM: 2920, 27.4A	P-5502B	6309/C3	6309/C3		Inspection, checking, cleaning, greasing, meggering and testing for smooth operation and parameters recording and submission of record in binder form.	1		
72	13	De-Butanizer Reflux Pump-A 30kW, 400V, 50Hz, RPM: 2955, 52.8A	P-5503A	6312/C3	6310/C3			1		



Make up Water Treatment Unit									
73	1	Cooling Water Circulation Pump 90kW, 400V, 50Hz, RPM: 2978, 159A	P-9803A	6317/C3	6317/C3	Inspection, checking, cleaning, Dismantling, Shifting, greasing, meggering, ,bearing replacement (if required), re-installation, alignment, commissioning and testing for smooth operation and parameters recording and submission of record in binder form.	1		
74	2		P-9803B	6317/C3	6317/C3		1		
75	3		P-9803C	6317/C3	6317/C3		1		
76	4	Side Steam Filter Blender Motor 15kW, 400V, 50Hz, RPM: 1465, 28A					1		
77	5	Cooling Water Fan Cooler 7.5kW, 400V, 50Hz, RPM: 1435, 14.9A	B9805A	6208DDU/C3	6208DDU/C3		1		
78	6		B9805B	6208DDU/C3	6208DDU/C3		1		
79	7		B9805C	6208DDU/C3	6208DDU/C3		1		
80	8		B9805D	6208DDU/C3	6208DDU/C3		1		
81	9		B9805E	6208DDU/C3	6208DDU/C3		1		
Package / Hot Oil Unit									
82	1	Hot Oil Circulation Pump 110kW, 400V, 50Hz, RPM: 2975, 188A	P-8101A	6314-C3	6314-M-C3-INSU	Inspection, checking, cleaning, Dismantling, Shifting, greasing, meggering, ,bearing replacement (if required), re-installation, alignment, commissioning and testing for smooth operation and parameters recording and submission of record in binder form.	1		
83	2		P-8101B	6314-C3	6314-M-C3-INSU		1		
84	3		P-8101C	6314-C3	6314-M-C3-INSU		1		
85	4	Hot Oil Secondary Pump 200kW, 6600V, 50Hz, RPM: 993, 22.9A	P-8103B	6322/C3	6319/C3 INSU		1		
86	5		P-8103C	6322/C3	6319/C3 INSU		1		
87	6		P-8103D	6322/C3	6319/C3 INSU		1		
88	7	Hot Oil Blower Fan90kW, 400V, 50Hz, RPM:2965, 151A	P-81B	6316/C3	6316/C3		1		
89	8		P-81C	6316/C3	6316/C3		1		
90	9		P-81D	6316/C3	6316/C3		1		
91	10		P-81E	6316/C3	6316/C3		1		
92	11		P-81F	6316/C3	6316/C3		1		
93	12	Hot Oil Circulation Pump 110kW, 400V, 50Hz, RPM: 2975, 188A	P-8101D	6314-C3	6314-M-C3-INSU		1		
94	13	Hot Oil Secondary Pump 200kW, 6600V, 50Hz, RPM: 993, 22.9A	P-8103A	6322/C3	6319/C3 INSU		1		
95	14	Hot Oil Blower Fan90kW, 400V, 50Hz, RPM:2965, 151A	P-81A	6316/C3	6316/C3		1		
Fire Water System									
96	1	Fire Water Pump 160KW, 289A	P-8801A	6313	6313	Inspection, checking, cleaning, Dismantling, Shifting, greasing, meggering, ,bearing replacement (if required), re-installation, alignment, commissioning and testing for smooth operation and parameters recording and submission of record in binder form.	1		
97	2	Fire Water Jockey Pump37KW, 66.8A	P-8802B	6212/C3	6312/C3		1		
98	3	Fire Water Pump 160KW, 289A	P-8801B	6313	6313		1		
99	4	Fire Water Jockey Pump37KW, 66.8A	P-8802A	6212/C3	6312/C3		1		
Turbines, Nitrogen Package and Inst Air Compressors									
100	1	Instrument Air Compressors 90kW, RPM: 1485, 162.4	K-8601A	6316/C3	6316/C3	Inspection, checking, cleaning, Dismantling, Shiftina. areasina. meaaerina. bearina	1		
101	2		K-8601B	6316/C3	6316/C3		1		
102	3	Nitrogen Compressor Motor 37KW, 65.2A	A				1		
103	4		B				1		
104	5	Tech Lube Oil Pump2.2KW, 4.6A	A				1		
105	6		B				1		
106	7		C				1		
107	8	Emergency Lube Oil Pump2.2 KW, 4.65A	A	6206-2Z	6206-2Z		1		
108	9		B	6206-2Z	6206-2Z		1		
109	10		C	6206-2Z	6206-2Z		1		

110	11	Air Cooling Fan 45KW, 80A	A-1	6314-C3	6314-C3	Inspection, checking, cleaning, greasing, shifting, greasing, meggering, bearing replacement (if required), re-installation, alignment, commissioning and testing for smooth operation and parameters recording and submission of record in binder form.	1			
111	12		A-2	6314-C3	6314-C3		1			
112	13		B-1	6314-C3	6314-C3		1			
113	14		B-2	6314-C3	6314-C3		1			
114	15	GT Enclosure Ventilation Fan 0.75KW	A-1				1			
115	16		A-2				1			
116	17		A-3				1			
117	18		B-1				1			
118	19		B-2				1			
119	20		B-3				1			
120	21		C-1				1			
121	22		C-2				1			
122	23		C-3				1			
123	24	Air Cooling Fan 45KW, 80A	C-1	6314-C3	6314-C3	Inspection, checking, cleaning, greasing, meggering and testing for smooth operation and parameters recording and submission of record in binder form.	1			
124	25	Air Cooling Fan 45KW, 80A	C-2	6314-C3	6314-C3		1			
<b>Power Generation Unit</b>										
125	1	GG-1 Canopy Air Intake Fan 7.5KW	1			Inspection, checking, cleaning, Dismantling, Shifting, greasing, meggering, bearing replacement (if required), re-installation, alignment, commissioning and testing for smooth operation and parameters recording and submission of record in binder form.	1			
126	2		2				1			
127	3		3				1			
128	4	DG Canopy Intake Fan 15KW	2				1			
129	5	GG-5 Canopy Exhaust Fan 4KW	1				1			
130	6		2				1			
131	7		3				1			
132	8	Power House Building Intake Fan, 1.5KW (Note: installed at +35fts scaffolding is required for safe maintenance at height)	EXF-1~6					6		
133	9	Power House Building Exhaust Fan, 2.8KW (Note: installed at +35fts scaffolding is required for safe maintenance at height)	EXF-8~12					5		
134	10	GG-2 Canopy Air Intake Fan 7.5KW	1				Inspection, checking, cleaning, greasing, meggering and testing for smooth operation and parameters recording and submission of record in binder form.	1		
135	11		2					1		
136	12		3					1		
137	13	GG-3 Canopy Air Intake Fan 7.5KW	1					1		
138	14		2			1				
139	15		3			1				
140	16	GG-4 Canopy Air Intake Fan 7.5KW	1			1				
141	17		2			1				
142	18		3			1				
143	19	GG-5 Canopy Air Intake Fan 7.5 KW	1			1				
144	20		2			1				
145	21		3			1				
146	22	GG-1 Canopy Exhaust Fan 4KW	1			1				
147	23		2			1				
148	24		3			1				
149	25	GG-2 Canopy Exhaust Fan 4KW	1			1				
150	26		2			1				
151	27		3			1				
152	28	GG-3 Canopy Exhaust Fan 4KW	1			1				
153	29		2			1				

154	30		3			1			
155	31		1			1			
156	32	GG-4 Canopy Exhaust Fan 4KW	2			1			
157	33		3			1			
158	34	DG Canopy Intake Fan15KW,	1			1			
159	35	Power House Building Intake Fan, 1.5KW (Note: installed at +35fts scaffolding is required for safe maintenance at height)	EXF- 7			1			
160	36	Power House Building Exhaust Fan, 2.8KW (Note: installed at +35fts scaffolding is required for safe maintenance at height)	EXF- 13			1			
161	1	PH Building Lights 250w, 400w (Note: Installed at +45fts)	L-1~8			8		Maintenance and Relocation is required. No welding and fabrication job will be required. Scaffolding is required for maintenance	
<b>Dehydration Train 1</b>									
162	1	Gas Recycle Compressor	K-4501A			1		Inspection, checking, cleaning, Dismantling, Shifting, greasing, meggering, ,bearing replacement (if required), re-installation, alignment, commissioning and testing for smooth operation and parameters recording and submission of record in binder form.	
163	2	75KW, 135.3A	K-4501B			1			
164	3	Regeneration Gas Cooler Fan	FA-4501A	6309-ZZ-C3	6209-ZZ-C3	1			
165	4	15KW, 27.1A	FA-4501B	6309-ZZ-C3	6209-ZZ-C3	1			
166	5	Lube Oil Pump	KM4501-A			1			
167	6	0.75KW, 1.4A	KM4501-B			1			
<b>Dehydration Train 2</b>									
168	1	Gas Recycle Compressor	K-5501A	6314C3	6314C3/VL2071	1		Inspection, checking, cleaning, Dismantling, Shifting, greasing, meggering, ,bearing replacement (if required), re-installation, alignment, commissioning and testing for smooth operation and parameters recording and submission of record in binder form.	
169	2	75KW, 135.3A	K-5501B						1
170	3	Regeneration Gas Cooler Fan	FA-5501A	6309-ZZ-C3	6209-ZZ-C3	1			
171	4	15KW, 27.1A	FA-5501B	6309-ZZ-C3	6209-ZZ-C3	1			
172	5	Lube Oil Pump	KM5501-A			1			
173	6	0.75KW, 1.4A	KM5501-B			1			
<b>LPG Loading Pumps</b>									
174	1	LPG Loading Pump 37KW	P-6202A			1		Inspection, checking, cleaning, Dismantling, Shifting, greasing, meggering, ,bearing replacement (if required), re-installation, alignment, commissioning and testing for smooth operation and parameters recording and submission of record in binder form.	
175	2		P-6202B			1			
176	3		P-6202C			1			
<b>SWITCHGEAR -2 (MV MODULES):</b>									
No.	N	Description	Tag No.	Job Description			Quantity	Unit Price	Total Price
1		Amine Charge P. M. Module (VCU & Soft starter) 500KW, 6600V, 50HZ, RPM: 2984, 49.9A Hot Oil Secondary P. M. Module (VCU & Soft Starter)	P-4404A				1		
2			P-4404B				1		
3			P-4404C				1		
4			P-5404A				1		
5			P-5404B				1		
6			P-5404C				1		
7			P-8103A				1		
8			P-8103B				1		

9	MV PANELS	200kW, 6600V, 50Hz, RPM: 993, 22.9A	P-8103C		1		
10			P-8103D		1		
11		1250KVA T/F VCU	MCC-1	MV Modules: Inspection, Servicing, Cleaning, Testing Of Contactors, Aux/Power Contactors, & Tightening Of All Connections.	1		
12		6.6KV, 400A	MCC-2		1		
13		1600KVA T/F VCU	MCC-3A		1		
14		6.6KV, 400A	MCC-3B		1		
15			MCC-4A		1		
16		2000KVA T/F VCU	MCC-4B		1		
17		6.6KV, 400A	MCC-5A		1		
18			MCC-5B		1		
19		MV VCB	Incomer-1		1		
20		6.6KV, 2500A, Siemens	Incomer-2		1		
21		Sectionalizer VCB	L07		1		
22	6.6KV, 2500A	L22	1				
23	Camp Feeder VCU	L27	1				
		6.6KV, 400A					

**SWITCHGEAR -2 (LV MODULES):**

Location		Amine Train-1					
S. No.	Description	Tag No.	Job Description	Quantity	Unit Price	Total Price	
1	ACB Module, 400V, 2000A, 4P	A	L.T. Modules: Inspection, Servicing, Cleaning, Testing Of Contactors, Thermal Relays, Aux. Contactors, Power Points, & Tightening Of All Connections	1			
2	Amine Booster P. M. Module	P-4403A		1			
3	55KW, 400V, 50HZ, RPM: 2975, 95.7A	P-4403B		1			
4		P-4403C		1			
5	Amine Circulation P. M. Module	P-4402A		1			
6	75KW, 400V, 50HZ, RPM: 2980, 129.7A	P-4402B		1			
7	Amine Regen Reflux P. M. Module	P-4405A		1			
8	5.5KW, 400V, 50HZ, RPM: 2900, 10.4A	P-4405B		1			
9	Amine Drain P. M. Module	P-4407		1			
10	Lean Amine Air Cooler Fan M. Module	EA-4401		1			
11		FA1		1			
12		EA-4401		1			
13		FA2		1			
14		EA-4401		1			
15		FA3		1			
16		EA-4401		1			
17		FA4		1			
18		EA-4401		1			
19		FA5		1			
20	Reflux Condenser Cooler Fan M. Module	EA-4401		1			
21		FA6		1			
		EA-4401	1				
		FA7	1				
		EA-4401	1				
		FA8	1				
		EA-4402	1				
		FA1	1				
		EA-4402	1				
		FA2	1				
		EA-4402	1				
		FA3	1				
		EA-4402	1				
		FA4	1				

Dehydration Train-1								
Location	S. No.	Description	Tag No.	Job Description	Quantity	Unit Price	Total Price	
MCC-1	1	Gas Recycle Compressor M. Module	K-4501A	L.T. Modules: Inspection, Servicing, Cleaning, Testing Of Contactors, Thermal Relays, Aux. Contactors, Power Points, & Tightening Of All Connections	1			
	2	75KW, 1035.3A	K-4501B		1			
	3	Regeneration Gas Cooler Fan M. Module	FA-4501A		1			
	4	15KW, 27.1A	FA-4501B		1			
	LPG Recovery & Gas Processing Unit Train-1							
	MCC-1	1	Stabilizer Overhead Compressor	KCP32-A	L.T. Modules: Inspection, Servicing, Cleaning, Testing Of Contactors, Thermal Relays, Aux. Contactors, Power Points, & Tightening Of All Connections	1		
		2	Module	KCP32-B		1		
		3	De-Ethanizer Reflux P. M. Module	P-4502-A		1		
		4	15kW, 400V, 50Hz, RPM: 2920, 27.4A	P-4502-B		1		
		5	De-Butanizer Reflux P. M. Module	P-4503-A		1		
		6	30kW, 400V, 50Hz, RPM: 2955, 52.8A	P-4503 -B		1		
		7	Absorber P. M. Module	P-4501-A		1		
		8	15kW, 400V, 50Hz, RPM: 2920, 27.4A	P-4501-B		1		
9		Turbo Expander Motor Module	TER-4501A	1				
10		2.2kW, 400V, 50Hz, RPM: 2895, 4.17A	TER-4501B	1				
11		Fan Cooler-1 M. Module	EA4501-A	1				
12		37kW, 400V, 50Hz, RPM: 975, 70.8A	EA4501-B	1				
13		Fan Cooler M. Module	EA4502	1				
		37KW, 400V, 50Hz, RPM: 975						
SWITCHGEAR -2 (LV MODULES):								
Amine Train-2								
Location	S. No.	Description	Tag No.	Job Description	Quantity	Unit Price	Total Price	
MCC-2	1	ACB Module		L.T. Modules: Inspection, Servicing, Cleaning, Testing Of Contactors, Thermal Relays, Aux. Contactors, Power Points, & Tightening Of All Connections	1			
	2	Amine Booster P. M. Module	P-5403A		1			
	3	55KW, 400V, 50HZ, RPM: 2975, 95.7A	P-5403B		1			
	4		P-5403C	1				
	5	Amine Circulation P. M. Module	P-5402A	1				
	6	75KW, 400V, 50HZ, RPM: 2980, 129.7A	P-5402B	1				
	7	Amine Regen Reflux P. M. Module	P-5405A	1				
	8	5.5KW, 400V, 50HZ, RPM: 2900, 10.4A	P-5405B	1				
	9	Amine Drain P. M. Module	P-5407	1				
	10		EA-5401 FA1	1				
	11		EA-5401 FA2	1				
	12		EA-5401 FA3	1				
	13		EA-5401 FA4	1				
	14		EA-5401 FA5	1				
	15	Lean Amine Air Cooler Fan M. Module	EA-5401 FA6	1				
	16	30KW, 400V, 50HZ, RPM: 985, 61.7A	EA-5401 FA7	1				
	17		EA-5401 FA8	1				
	18	Reflux Condenser Cooler Fan P M. Module	EA-5402 FA1	1				
	19	30KW, 400V, 50HZ, RPM: 985, 61.7A	EA-5402 FA2	1				
	20		EA-5402 FA3	1				
	21		EA-5402 FA4	1				
AE SWITCHGEAR -2 (LV MODULES):								
Dehydration Train-2								
Location	S. No.	Description	Tag No.	Job Description	Quantity	Unit Price	Total Price	
	1	Gas Recycle Compressor M. Module	K-5501A	L.T. Modules: Inspection, Servicing, Cleaning, Testing Of Contactors, Thermal Relays, Aux. Contactors, Power Points, & Tightening Of All Connections	1			
	2	75KW, 135.3A	K-5501B		1			
	3	Regeneration Gas Cooler Fan M. Module	FA-5501A		1			
	4	15KW, 27.1A	FA-5501B		1			

LPG Recovery & Gas Processing Unit Train-2							
S. No.	Description	Tag No.	Job Description	Quantity	Unit Price	Total Price	
MCC-2	1	Stabilizer Overhead Compressor Module	KCP32C	L.T. Modules: Inspection, Servicing, Cleaning, Testing Of Contactors, Thermal Relays, Aux. Contactors, Power Points, & Tightening Of All Connections	1		
	2	90KW, 400V, 50HZ, RPM: 1480, 165.5A	KCP32D		1		
	3	De-Ethanizer Reflux P. M. Module	P-5502A		1		
	4	15kW, 400V, 50Hz, RPM: 2920, 27.4A	P-5502B		1		
	5	De-Butanizer Reflux P. M. Module	P-5503A		1		
	6	30kW, 400V, 50Hz, RPM: 2955, 52.8A	P-5503B		1		
	7	Absorber P. M. Module	P-5501A		1		
	8	15kW, 400V, 50Hz, RPM: 2920, 27.4A	P-5501B		1		
	9	Turbo Expander Motor Module	TER-5501A		1		
	10	2.2kW, 400V, 50Hz, RPM: 2895, 4.17A	TER-5501B		1		
	11	Fan Cooler-1 M. Module	EA5501A		1		
	12	37kW, 400V, 50Hz, RPM: 975, 70.8A	EA5501B		1		
	13	Fan Cooler M. Module	EA5502		1		
SWITCHGEAR -2 (LV MODULES)							
Location	Inst Air Compressors:						
S. No.	Description	Tag No.	Job Description	Quantity	Unit Price	Total Price	
MCC-3	1	ACB Module	Incomer-1	L.T. Modules: Inspection, Servicing, Cleaning, Testing Of Contactors, Thermal Relays, Aux. Contactors, Power Points, & Tightening Of All Connections	1		
	2	400V, 2500A, 4P	Incomer-2		1		
	3		Bus Coupler		1		
	Compressors:				1		
	4	Instrument Air Compressors Module	K-8601A		1		
5	90KW, RPM: 1485, 162.4A	K-8601B	1				
SWITCHGEAR -2 (LV MODULES)							
Location	S. No.	Description	Tag No.	Job Description	Quantity	Unit Price	Total Price
MCC-4	1	ACB Module	Incomer-1	L.T. Modules: Inspection, Servicing, Cleaning, Testing Of Contactors, Thermal Relays, Aux. Contactors, Power Points, & Tightening Of All Connections	1		
	2	400V, 3200A, 4P	Incomer-2		1		
	3		Bus Coupler		1		
	LPG Loading Areas:				1		
	1	LPG Off Spec P. M. Module 7.5KW, 13.5A	P-6201		1		
	2	LPG Loading P. M. Module	P-6202A		1		
	3	37KW, 66.8A	P-6202B		1		
	4		P-6202C		1		
	Hot Oil Area:				1		
	1		P-8101A		1		
	2	Hot Oil Circulation P. M. Module	P-8101B		1		
	3	110kW, 400V, 50Hz, RPM: 2975, 188A	P-8101C		1		
	4		P-8101D		1		
	5		P-81A		1		
	6		P-81B		1		
	7		P-81C		1		
	8	Hot Oil Fan Blower Module	P-81D		1		
9	90kW, 400V, 50Hz, RPM:2965, 151A	P-81E	1				
10		P-81F	1				

**SWITCHGEAR -5 (LV And MV MODULES)**

Produced And Fire Water System:

Location	Sr. No.	Description	Tag No.	Job Description	Quantity	Unit Price	Total Price
SW-5	1	Vacuum Contactor For 2000KVA T/F	SWG005-A	Modules: Inspection, Servicing, Cleaning, Testing Of Contactors, Thermal Relays, Aux. Contactors, Power Points, & Tightening Of All Connections	1		
HT	2	6.6KV, 400A	SWG005-B		1		
MCC-5	1	ACB Module	Incomer-1, (F31)		1		
	2	400V, 3200A, 4P	Incomer-2, (F33)		1		
	3		Bus Coupler, (F32)		1		
	4	Recovered Oil P. M. Module	P-4303A		1		
	5	5.5KW, 9.9A	P-4303B		1		
	6	Produced Water Transfer P. M. Module	P-4302A		1		
	7	4KW, 7.2A	P-4302B		1		
	8		P-4302C		1		
	9	Well Reinjection P. M. Module	P-4304A		1		
	10	55KW, 99.2A	P-4304B		1		
	11	Evaporation Pond P. M. Module 7.5KW, 13.5A	P-4305		1		
	12	Fire Water P. M. Module	P-8801A		1		
	13	160KW, 289A,	P-8801B		1		
	14	Fire Water Jockey P. M. Module	P-8803-A		1		
	15	37KW, 66.8A	P-8803-B		1		
	16	Raw Water P. M. Module	P-8702-A		1		
	17	30kW, 400V, 50Hz, RPM: 2950, 55A	P-8702-B		1		
	18	Treated Water P. M. Module	P-8703-A		1		
	19	15kW, 400V, 50Hz, RPM: 2930, 28.5A	P-8703-B		1		
	20	Deep Well P. Module, 30KW, 54.1A	P-8701-A		1		
21	P-8701-B		1				
22	P-8201-B		1				

**SWITCHGEAR -2**

Location	S. No.	Description	Tag No	Job Description	Remarks	Quantity	Unit Price	Total Price
UPS Room	1	80KVA UPS	A	Inspection, Cleaning, Testing & Tightening Of Terminals And Power Cables Along With 350 No Batteries.		1		
	2	175 Batteries, 12VDC, 98AH	B			1		
Main MCC	3	DC Chargers 400VAC/110VDC, 55Batteries, 226AH, 2V Cell		Inspection, Cleaning, Testing & Tightening Of Terminals And Power Cables Along With 55 No Batteries.		1		
Transformers Near Main MCC	4	1250KVA Transformer	MCC-1	Transformers: Inspection, Servicing, Cleaning, tightening of connections, silica get inspection and replacement (if required), oil inspection & testing, buchholz relay testing, etc.		1		
	5	6.6KV/400V, Oil Immersed	MCC-2			1		
	6	1600KVA Transformer	MCC-3A			1		
	7	6.6KV/400V, Oil Immersed	MCC-3B			1		
	8		MCC-4A			1		
MCC-5	9	2000KVA Transformer	MCC-4B	1				
	10	6.6KV/400V, Oil Immersed	MCC-5A	1				
	11		MCC-5B	1				

Whole Plant	12	Allied Services		Allied Services For Electric Supply At Different Locations Within Plant.		1		
	13	Earth Resistance Measurement		Cleaning and testing of Earth pits.		1		
Power House, Main MCC, RO & Cooling Tower	14	MV & LV Bus Bars (Power House, Main MCC, RO & Cooling Tower		Inspection, cleaning and tightening (if required) of: MV SWGR -1, MV SWGR 2, LV MCC 1, 2, 3, 4, 5 and LV MCC GT 1, GT 2, GT3, and LV MCC RO PLANT, LV MCC Cooling Tower, LV SWGR AA01 AND AA02 (Power House).		1		

**SWITCHGEAR -2 (LV MODULES):**

**Sale Gas Turbines**

Location	S No.	Description	Tag No.	Job Description	Remarks	Quantity	Unit Price	Total Price		
GTs MCC	1	Tech Lube Oil P. M. Module	A	L.T. Modules: Inspection, Servicing, Cleaning, Testing Of Contactors, Thermal Relays, Aux. Contactors, Power Points, & Tightening Of All Connections		1				
	2	2.2KW, 4.6A	B			1				
	3		C			1				
	4	Emergency Lube Oil P. M. Module,	A			1				
	5	2.2 KW, 4.65A	B			1				
	6		C			1				
	7		A-1			1				
	8		A-2			1				
	9		B-1			1				
	10	Air Cooling Fan M. Module	B-2			1				
	11	45KW, 80A	C-1			1				
	12		C-2			1				
	13		A-1			1				
	14		A-2			1				
	15		A-3			1				
	16		B-1			1				
	17		B-2			1				
	18		B-3			1				
	19		C-1			1				
	20	GT Enclosure Ventilation Fan M. Module	C-2			1				
	21		C-3			1				
	22	30KVA GT UPS	GT-1			1	Inspection, Cleaning,			
	23	Three Phase to Three Phase	GT-2			1	Testing & Tightening Of Terminals And Power Cables Along With 96 No Batteries.			
	24	400/230 32 Batteries, 12VDC, 65AH	GT-3			1				
GT-2 MCC	25	Nitrogen Compressor Module:	A	L.T. Modules: Inspection, Servicing, Cleaning, Testing Of Contactors, Thermal Relays, Aux. Contactors, Power Points, & Tightening Of All Connections		1				
	26	37KW, 65.2A	B			1				

**Water Treatment Unit & Utilities (RO Plant)**

Location	Sr. No.	Description	Tag No.	Job Description	Quantity	Unit Price	Total Price
RO Plant	1	Backwash Water P. M. Module	P-8708-A	L.T. Modules: Inspection, Servicing, Cleaning, Testing Of Contactors, Thermal Relays, Aux. Contactors, Power Points, & Tightening Of All Connections	1		
	2	22kW, 380V, 50Hz, RPM: 1465, 43A	P-8708-B		1		
	3	RO Wash Pump	P-8707		1		
	4	RO Water Supply P. M. Module	P-8705-A		1		
	5	37kW, 400V, 50Hz, RPM: 2950, 63.5A	P-8705-B		1		



Make Up Water Treatment Unit (Cooling Tower)							
	Sr. No.	Description	Tag No.	Job Description	Quantity	Unit Price	Total Price
Cooling Tower	1	Cooling Water Circulation P. M. Module	P-9803A	L.T. Modules:	1		
	2	90kW, 400V, 50Hz, RPM: 2978, 159A	P-9803B	Inspection, Servicing, Cleaning, Testing Of Contactors, Thermal Relays, Aux. Contactors, Power Points, & Tightening Of All Connections	1		
	3		P-9803C		1		
	4	Side Steam Filter Blender Motor Module 15kW, 400V, 50Hz, RPM: 1465, 28A	A		1		
	5		B9805A		1		
	6		B9805B		1		
	7	Cooling Water Fan Cooler Module	B9805C		1		
	8	7.5kW, 400V, 50Hz, RPM: 1435, 14.9A	B9805D		1		
	9		B9805E		1		
AI1 Power Generation:							
Location	Sr. No.	Description	Tag No.	Job Description	Quantity	Unit Price	Total Price
Power House LV Switchgear	1	Three Phase to Single Phase	A	Inspection, Cleaning & Tightening Of Terminals And Power Cables Along With 60 No Batteries.	1		
	2	30 Batteries, 12VDC, 65AH	B		1		
	3	UPS Distribution Panel	1	Modules: Inspection, Servicing, Cleaning, Testing Of Contactors, Thermal Relays, Aux. Contactors, Power Points, & Tightening Of All Connections	1		
4	LV Switchgear 16 No MCCB Feeder Modules	AA01 AA02	1 1				
Switchgear -1 Power House MV Room	5	Vacuum Circuit Breaker (VCB) of Gas Generators 6.6KV, 1250A	AH15	MV Modules: Inspection, Servicing, Cleaning, Testing Of Contactors, Aux/Power Contactors, & Tightening Of All Connections.	1		
	6		GG-1 AH13		1		
	7		GG-2 AH12		1		
	8		GG-3 AH09		1		
	9		GG-4 AH07		1		
	10		GG-5 AH03		1		
	11		FDG AH-14		1		
	12		AH-02		1		
	13		AH-10		1		
	14		AH-04		1		
	15		AH-01		1		
16	AH-06	1					
17	AH-16	1					
18	DC Chargers 40AH Three Phase to Single Phase 09 Batteries, 12VDC, 65AH	1	Inspection, Cleaning & Tightening Of Terminals And Power Cables Along With Batteries.	1			

Total in PKR (exclusive of PST/ICT)

**INSTRUMENT SECTION SCOPE OF WORK / JOB LIST FOR ATA - 19 OF KPD-TAY PLANT**

Sr No.	Description	Instrument Type	Size (In/Out)	End Connection & Rating (In / Out)	Make	JOB DESCRIPTION	TOOL/EQUIPMENT REQUIRED	QTY	Unit Price (exclusive of PST/ICT)	Total Price (exclusive of PST/ICT)
<b>CONTROL VALVES</b>										
<b>i) STROKE TEST/MAINTENANCE</b>										
1	Stroke Test/ Maintenance of LCV-4400; Feed Gas Knock out Drum, Amine Train-1	Control Valve	1"	RF, 600#	FISHER	To record As-Found /As-Left calibration data. On-Site calibration and integrity checks of Actuator, Positioner. Functional testing to be performed. No dismantelling/ re-installation is required. Provide soft and hard copies of assignments and certifications.	All tools, consumables & calibration equipments for executing the said job will be in contractor's scope.	1		
2	Stroke Test/ Maintenance of LCV-4408; Treated Gas Knock Out Drum, Amine Train-1	Control Valve	1"	RF, 600#	FISHER			1		
3	Stroke Test/ Maintenance of LCV-4410; Amine Regenerator, Amine Train-1	Control Valve	10"	WAFER, 150#	FISHER			1		
4	Stroke Test/ Maintenance of LCV-4415; Amine Regenerator Reflux Drum, Amine Train-1	Control Valve	2"	RF, 150#	FISHER			1		
5	Stroke Test/ Maintenance of PCV-4405; Hydrocarbon Skim Drum, Amine Train-1	Control Valve	8"	RF, 600#	FISHER			1		
6	Stroke Test/ Maintenance of PCV-4407A; Fuel Gas Absorber, Amine Train-1	Control Valve	1.5"	RF, 150#	FISHER			1		
7	Stroke Test/ Maintenance of PCV-4407B; Fuel Gas Absorber, Amine Train-1	Control Valve	1.5"	RF, 150#	FISHER			1		
8	Stroke Test/ Maintenance of PCV-4411; Amine Regenerator Reflux Drum, Amine Train-1	Control Valve	10"	WAFER, 150#	FISHER			1		
9	Stroke Test/ Maintenance of FCV-4407; Amine Regenerator Reboiler, Amine Train-1	Control Valve	10"	WAFER, 300#	FISHER			1		
10	Stroke Test/ Maintenance of FCV-4408; Amine Regenerator Reboiler, Amine Train-1	Control Valve	10"	WAFER, 300#	FISHER			1		
11	Stroke Test/ Maintenance of FCV-4411; Amine Regenerator Reflux Drum, Amine Train-1	Control Valve	1"	RF, 150#	FISHER			1		
12	Stroke Test/ Maintenance of FCV-4414; Amine Circulation Pump, Amine Train-1	Control Valve	6"	RF, 150#	FISHER			1		
13	Stroke Test/ Maintenance of FCV-4417; Amine Charge Pump, Amine Train-1	Control Valve	8"	RF, 600#	FISHER			1		
14	Stroke Test/ Maintenance of FCV-4419; Amine Charge Pump, Amine Train-1	Control Valve	3"	RF, 600#	FISHER			1		
15	Stroke Test/ Maintenance of FCV-4420; Amine Charge Pump, Amine Train-1	Control Valve	3"	RF, 600#	FISHER			1		
16	Stroke Test/ Maintenance of FCV-4421; Amine Charge Pump, Amine Train-1	Control Valve	3"	RF, 600#	FISHER			1		
17	Stroke Test/ Maintenance of FCV-4422; Lean Amine Trim Cooler, Amine Train-1	Control Valve	2"	RF, 150#	FISHER			1		
18	Stroke Test/ Maintenance of PDCV-4410; Lean Amine Filter, Amine Train-1	Control Valve	6"	RF, 150#	FISHER			1		
19	Stroke Test/ Maintenance of LCV-4403 Inlet Gas Trim Cooler, Amine Train-1	Control Valve	1"	RF 600#	FISHER			1		
20	Stroke Test/ Maintenance of LCV-4412 Lean Amine Air Cooler, Amine Train-1	Control Valve	8"	RF, 150#	FISHER			1		
21	Stroke Test/ Maintenance of PCV-4411 Amine Regenerator Reflux Drum, Amine Train-1	Control Valve	10"	WAFER, 150#	FISHER			1		
22	Stroke Test/ Maintenance of TCV-4433A Lean Amine Air Cooler, Amine Train-1	Control Valve	8"	RF 150#	FISHER			1		
23	Stroke Test/ Maintenance of TCV-4433B Lean Amine Air Cooler, Amine Train-1	Control Valve	6"	RF 150#	FISHER			1		
24	Stroke Test/ Maintenance of LCV-5400; Feed Gas Knock out Drum, Amine T-2	Control Valve	1"	RF 600#	FISHER			1		







115	Stroke Test/ Maintenance of PDCV-9804; COOLING WATER CIRCULATION PUMP	Control Valve	4"	RF 150#	FISHER			1		
116	Stroke Test/ Maintenance of PCV-4302; Produced Water Degasser T-4301	Control Valve	1"	RF 150#	ARCA			1		
117	Stroke Test/ Maintenance of LCV-4301; Produced Water Degasser V-4301	Control Valve	3"	RF 150#	ARCA			1		
118	Stroke Test/ Maintenance of PDCV-4101 K Slug Catcher	Control Valve	16"	RF, 600#	ARCA			1		
119	Stroke Test/ Maintenance of LCV-4102 K Slug Catcher	Control Valve	3"	RF, 600#	ARCA			1		
120	Stroke Test/ Maintenance of LCV-4103 K Slug Catcher	Control Valve	2"	RF, 600#	ARCA			1		
121	Stroke Test/ Maintenance of PDCV-5101 T-Slug Catcher	Control Valve	8"	RF, 600#	ARCA			1		
122	Stroke Test/ Maintenance of LCV-5102 T-Slug Catcher	Control Valve	3"	RF, 600#	ARCA			1		
123	Stroke Test/ Maintenance of LCV-5103 T-Slug Catcher	Control Valve	1.5"	RF, 600#	ARCA			1		
124	Stroke Test/ Maintenance of FCV-4210, Slug Catcher & Separator Area	Control Valve	12"	RF, 600#	ARCA			1		
125	Stroke Test/ Maintenance of FCV-4211, Slug Catcher & Separator Area	Control Valve	12"	RF, 600#	ARCA			1		
126	Stroke Test/ Maintenance of FCV-4212, Slug Catcher & Separator Area	Control Valve	3"	RF, 600#	ARCA			1		
127	Stroke Test/ Maintenance of FCV-4213, Slug Catcher & Separator Area	Control Valve	3"	RF, 600#	ARCA			1		
128	Stroke Test/ Maintenance of PCV-4200; K-Production Separator	Control Valve	16"	RF, 600#	PARCOL			1		
129	Stroke Test/ Maintenance of PCV-4201; K-Production Separator	Control Valve	2"	RF, 600#	PARCOL			1		
130	Stroke Test/ Maintenance of LCV-4200; K-Production Separator	Control Valve	2"	RF, 600#	PARCOL			1		
<b>ii) PASSING RECTIFICATION &amp; OVERHAULING</b>										
1	Passing Rectification & Overhauling of PCV-4102, Slug Catcher & Separator Area	Control Valve	6"	RF, 600#	ARCA	Removal from line, inspection / testing of valve, dismantling for rectification / machining / part replacement (if required), Pressure testing, calibration, re-installation and commissioning of control valve. To record As-Left calibration data. Provision of soft and hard copies of assignments and Certifications. Gaskets and Valve spares will to be provided by OGDCL Instrument Team.	All tools, consumables (excluding Gaskets & Control Valves spares), calibration & testing equipments including Pressure Test Bench, Lathe Machine for executing the said job will be in contractor's scope.	1		
2	Passing Rectification & Overhauling of PCV-5102, Slug Catcher & Separator Area	Control Valve	3"	RF, 600#	ARCA			1		
3	Passing Rectification & Overhauling of LCV-4201, K-Production Separator	Control Valve	2"	RF, 600#	PARCOL			1		
4	Passing Rectification & Overhauling of LCV-5201, T-Production Separator	Control Valve	1"	RF, 600#	PARCOL			1		
5	Passing Rectification & Overhauling of LCV-4405; Amine Absorber, Amine Train-1	Control Valve	8-inch	RF, 600#	FISHER			1		
6	Passing Rectification & Overhauling of PCV-4405B; Treated Gas Knock Out Drum, Amine	Control Valve	8-inch	RF, 600#	FISHER			1		
7	Passing Rectification & Overhauling of LCV-5405; Amine Absorber, Amine Train-2	Control Valve	8-inch	RF, 600#	FISHER			1		
8	Passing Rectification & Overhauling of PCV-5405B; Treated Gas Knock Out Drum, Amine	Control Valve	8-inch	RF, 600#	FISHER			1		
9	Passing Rectification & Overhauling of PCV-8002A; Hp Fuel Gas Knock Out Pot	Control Valve	3"	RF 600#	FISHER			1		
10	Passing Rectification & Overhauling of PCV-8002B; Hp Fuel Gas Knock Out Pot	Control Valve	3"	RF 300#	FISHER			1		
11	Passing Rectification & Overhauling of PCV-8010; LP Fuel Gas Knock Out Pot	Control Valve	3"	RF 300#	FISHER			1		
12	Passing Rectification & Overhauling BDV-6309A; SG Compressor Air Cooler	Blowdown Valve	6"	RTJ 900#	KOSO			1		
13	Passing Rectification & Overhauling of BDV-6309B; SG Compressor Air Cooler	Blowdown Valve	6"	RTJ 900#	KOSO			1		

14	Passing Rectification & Overhauling of BDV-6309C; SG Compressor Air Cooler	Blowdown Valve	6"	RTJ 900#	KOSO			1		
15	Passing Rectification & Overhauling of PCV-6303A; Sale Gas Compressor	Control Valve	6"	RF 300#	WZ Pneumatic			1		
16	Passing Rectification & Overhauling of PCV-6303B; Sale Gas Compressor	Control Valve	6"	RF 300#	WZ Pneumatic			1		
17	Passing Rectification & Overhauling of PCV-6303C; Sale Gas Compressor	Control Valve	6"	RF 300#	WZ Pneumatic			1		
18	Passing Rectification & Overhauling of FCV-4503; E-4502 REG GAS HEATER, Dehydration T-1	Control Valve	3"	RF 600#	FLOWSERVE			1		
19	Passing Rectification & Overhauling of FCV-5503; E-5502 REG GAS HEATER, Dehydration T-2	Control Valve	3"	RF 300#	FLOWSERVE			1		
20	Installation of 10" PCV at sale gas line	Control Valve	10"	RF 600#	FISHER			1		
<b>LEVEL TRANSMITTERS (SERVICE &amp; CALIBRATION)</b>										
1	Service and Calibration of LT-4405, Amine Absorber, Amine Train-1	Level Transmitter (DP)			ROSEMOUNT	Dismantling, inspection, calibration and commissioning of Level Transmitters. Provision of soft and hard copies of assignments and Certifications.	All tools, consumables, calibration & testing equipments including for executing the said job will be in contractor's scope.	1		
2	Service and Calibration of Test of LT-4410, Rich Amine Flash Drum, Amine Train-1	Level Transmitter (DP)			ROSEMOUNT			1		
3	Service and Calibration of LT-4412, Amine Regenerator, Amine Train-1	Level Transmitter (DP)			ROSEMOUNT			1		
4	Service and Calibration of LT-8705A; R.O. Water	Level Transmitter (DP)			Endress+Hauser			1		
5	Service and Calibration of LT-8705B ; R.O. Water	Level Transmitter (DP)			Endress+Hauser			1		
6	Service and Calibration of LT-8706 ; R.O. Water	Level Transmitter (DP)			Endress+Hauser			1		
7	Service and Calibration of LT-8707 ; R.O. Water	Level Transmitter (DP)			Endress+Hauser			1		
8	Service and Calibration of LT-8708 ; R.O. Water	Level Transmitter (DP)			Endress+Hauser			1		
9	Calibration/Function Test of LT-4501; V-4501, Dehydration T-1	Level Transmitter (GWR)			Endress + Hauser (GWR)	Servicing, Calibration and Functional Testing of Transmitters. Provision of soft and hard copies of assignments and Certifications.	All tools, consumables, calibration & testing equipments including for executing the said job will be in contractor's scope.	1		
10	Calibration/Function Test of LT-4503A; F-4501A, Dehydration T-1	Level Transmitter (GWR)			Endress + Hauser (G)			1		
11	Calibration/Function Test of LT-4503B; F-4501B, Dehydration T-1	Level Transmitter (GWR)			Endress + Hauser (G)			1		
12	Calibration/Function Test of LT-4505; V-4503, Dehydration T-1	Level Transmitter (GWR)			Endress + Hauser (G)			1		
13	Calibration/Function Test of LT-5501; V-4501, Dehydration T-2	Level Transmitter (GWR)			Endress + Hauser (G)			1		
14	Calibration/Function Test of LT-5503A; F-5501A, Dehydration T-2	Level Transmitter (GWR)			Endress + Hauser (G)			1		
15	Calibration/Function Test of LT-5503B; F-5501B, Dehydration T-2	Level Transmitter (GWR)			Endress + Hauser (G)			1		
16	Calibration/Function Test of LT-5505; V-5503, Dehydration T-2	Level Transmitter (GWR)			Endress + Hauser (G)			1		
17	Calibration/Function Test of LT-4100, Slug Catcher & Separator Area	Level Transmitter (GWR)			VEGA Grieshaber KG (			1		
18	Calibration/Function Test of LT-4101, Slug Catcher & Separator Area	Level Transmitter (GWR)			VEGA Grieshaber KG (			1		
19	Calibration/Function Test of LT-5100, Slug Catcher & Separator Area	Level Transmitter (GWR)			VEGA Grieshaber KG (			1		
20	Calibration/Function Test of LT-5101, Slug Catcher & Separator Area	Level Transmitter (GWR)			VEGA Grieshaber KG (			1		
21	Service and Calibration of LT-4400, Feed Gas Knock Out Drum, Amine Train-1	Level Transmitter (Displacer)			Magnetrol	Dismantelling of level transmitter, Level troll internal cleaning, displacer	All Tools & calibration / testing equipment	1		
22	Service and Calibration of LT-4402, Feed Gas Filter Coalescer, Amine Train-1	Level Transmitter (Displacer)			Magnetrol			1		

23	Service and Calibration of LT-4403, Feed Gas Filter Coalescer, Amine Train-1	Level Transmitter (Displacer)		Magnetrol	cleaning & servicing, calibration, re-installation and commissioning. Provision of soft and hard copies of assignments and Certifications.	required to perform complete job will be in contractor's scope.	1		
24	Service and Calibration of LT-4408, Treated Gas Knock Out Drum, Amine Train-1	Level Transmitter (Displacer)		Magnetrol			1		
25	Service and Calibration of LT-4415; Amine Regenerator Reflux Drum, Amine Train-1	Level Transmitter (Displacer)		Magnetrol			1		
26	Service and Calibration of LT-4414; Amine Train-1	Level Transmitter (Displacer)		Magnetrol			1		
27	Service and Calibration of LT-5400; Feed Gas Knock Out Drum, Amine T-2	Level Transmitter (Displacer)		Magnetrol			1		
28	Service and Calibration of LT-5402; Feed Gas Filter Coalescer, Amine T-2	Level Transmitter (Displacer)		Magnetrol			1		
29	Service and Calibration of LT-5403; Feed Gas Filter Coalescer, Amine T-2	Level Transmitter (Displacer)		Magnetrol			1		
30	Service and Calibration of LT-5405; Amine Absorber, Amine T-2	Level Transmitter (Displacer)		Magnetrol			1		
31	Service and Calibration of LT-5408; Treated Gas Knock Out Drum, Amine T-2	Level Transmitter (Displacer)		Magnetrol			1		
32	Service and Calibration of LT-5410; Rich Amine Flash Drum, Amine T-2	Level Transmitter (Displacer)		Magnetrol			1		
33	Service and Calibration of LT-5412; Amine Regenerator, Amine T-2	Level Transmitter (Displacer)		Magnetrol			1		
34	Service and Calibration of LT-5415; Amine Regenerator Reflux Drum, Amine T-2	Level Transmitter (Displacer)		Magnetrol			1		
35	Service and Calibration of LT-5414; Amine Train-2	Level Transmitter (Displacer)		Magnetrol			1		
36	Service and Calibration of LT-4500; Low Temperature Separator, LPG Train-1	Level Transmitter (Displacer)		Magnetrol			1		
37	Service and Calibration of LT-4501; Inlet Gas Absorber, LPG Train-1	Level Transmitter (Displacer)		Magnetrol			1		
38	Service and Calibration of LT-4505; De-Euthanizer Reboiler, LPG Train-1	Level Transmitter (Displacer)		Magnetrol			1		
39	Service and Calibration of LT-4512; De-Botanizer Reboiler, LPG Train-1	Level Transmitter (Displacer)		Magnetrol			1		
40	Service and Calibration of LT-4514; De-Euthanizer Reflux Drum, LPG Train-1	Level Transmitter (Displacer)		Magnetrol			1		
41	Service and Calibration of LT-5500; Low Temperature Separator, LPG T-2	Level Transmitter (Displacer)		Magnetrol			1		
42	Service and Calibration of LT-5501; Inlet Gas Absorber, LPG T-2	Level Transmitter (Displacer)		Magnetrol			1		
43	Service and Calibration of LT-5505; De-Euthanizer Reboiler, LPG T-2	Level Transmitter (Displacer)		Magnetrol			1		
44	Service and Calibration of LT-5512; De-Botanizer Reboiler, LPG T-2	Level Transmitter (Displacer)		Magnetrol			1		
45	Service and Calibration of LT-5514; De-Euthanizer Reflux Drum, LPG T-2	Level Transmitter (Displacer)		Magnetrol			1		
46	Service and Calibration of LT-7102; Flash Separator, LPG Train-1	Level Transmitter (Displacer)		Magnetrol			1		
47	Service and Calibration of LT-7104; Flash Separator, LPG Train-1	Level Transmitter (Displacer)		Magnetrol			1		
48	Service and Calibration of LT-7106; Condensate Filter Coalescer, LPG Train-1	Level Transmitter (Displacer)		Magnetrol			1		
49	Service and Calibration of LT-7108; Stabilizer Reboiler, LPG Train-1	Level Transmitter (Displacer)		Magnetrol			1		
50	Service and Calibration of LT-7110; Compressor Suction Drum, LPG Train-1	Level Transmitter (Displacer)		Magnetrol			1		
51	Service and Calibration of LT-7202; Flash Separator, Condensate Stabilization Area	Level Transmitter (Displacer)		Magnetrol			1		
52	Service and Calibration of LT-7204; Flash Separator, Condensate Stabilization Area	Level Transmitter (Displacer)		Magnetrol			1		



53	Service and Calibration of LT-7206; Condensate Filter Coalescer, Condesate Stabilization Area	Level Transmitter (Displacer)		Magnetrol			1		
54	Service and Calibration of LT-7208; Stabilizer Reboiler, Condesate Stabilization Area	Level Transmitter (Displacer)		Magnetrol			1		
55	Service and Calibration of LT-7210; Compressor Suction Drum, Condesate Stabilization Area	Level Transmitter (Displacer)		Magnetrol			1		
56	Service and Calibration of LT-8102; Hot Oil	Level Transmitter (Displacer)		Magnetrol			1		
57	Service and Calibration of LT-8001; HP Fuel Gas Knock Out Pot (V-8001)	Level Transmitter (Displacer)		Magnetrol			1		
58	Service and Calibration of LT-8002; LP Fuel Gas Knock Out Pot (V-8002)	Level Transmitter (Displacer)		Magnetrol			1		
59	Service and Calibration of LT-8201A; Flare Knock Out Drum ( V-8201A)	Level Transmitter (Displacer)		Magnetrol			1		
60	Service and Calibration of LT-8201B; Flare Knock Out Drum ( V-8201B)	Level Transmitter (Displacer)		Magnetrol			1		
61	Service and Calibration of LT-4301; Produced Water Degasser	Level Transmitter (Displacer)		Magnetrol			1		
62	Calibration/Function Test of LT-4200, Slug Catcher & Separator Area	Level Transmitter (Displacer)		Spriano			1		
63	Calibration/Function Test of LT-4201, Slug Catcher & Separator Area	Level Transmitter (Displacer)		Spriano			1		
64	Calibration/Function Test of LT-5200, Slug Catcher & Separator Area	Level Transmitter (Displacer)		Spriano			1		
65	Calibration/Function Test of LT-5201, Slug Catcher & Separator Area	Level Transmitter (Displacer)		Spriano			1		

**LEVEL SWITCHES (SERVICE & CALIBRATION)**

1	Service and Calibration of LSSL-4400; Feed Gas Knock Out Drum, Amine Train-1	Level Switch		Magnetrol	Onsite dismantling, inspection, cleaning / servicing , calibration and commissioning of level switches. Provision of soft and hard copies of assignments and Certifications.	All Tools calibration / testing equipment required to perform complete job will be in contractor's scope.	1		
2	Service and Calibration of LSSL-4402; Feed Gas Filter Coalescer, Amine Train-1	Level Switch		Magnetrol			1		
3	Service and Calibration of LSSL-4403; Feed Gas Filter Coalescer, Amine Train-1	Level Switch		Magnetrol			1		
4	Service and Calibration of LSSL-4405; Amine Absorber, Amine Train-1	Level Switch		Magnetrol			1		
5	Service and Calibration of LSSL-4407; Treated Gas Knock Out Drum, Amine Train-1	Level Switch		Magnetrol			1		
6	Service and Calibration of LSSL-4410; Rich Amine Flash Drum, Amine Train-1	Level Switch		Magnetrol			1		
7	Service and Calibration of LSSL-4412; Amine Regenerator, Amine Train-1	Level Switch		Magnetrol			1		
8	Service and Calibration of LSSL-4414; Amine Storage Tank, Amine Train-1	Level Switch		Magnetrol			1		
9	Service and Calibration of LSSL-4450; Chemical Reservoir, Amine T-1	Level Switch		Magnetrol			1		
10	Service and Calibration of LSHH-4400; Feed Gas Filter Coalescer, Amine Train-1	Level Switch		Magnetrol			1		
11	Service and Calibration of LSHH-4401; Amine Absorber, Amine Train-1	Level Switch		Magnetrol			1		
12	Service and Calibration of LSHH-4402; Treated Gas Knock Out Drum, Amine Train-1	Level Switch		Magnetrol			1		
13	Service and Calibration of LSHH-4405; Rich Amine Flash Drum, Amine Train-1	Level Switch		Magnetrol			1		
14	Service and Calibration of LSHH-4407; Amine Regenerator, Amine Train-1	Level Switch		Magnetrol			1		
15	Service and Calibration of LSSL-5450; Hydrocarbon Skim Drum	Level Switch		Magnetrol			1		
16	Service and Calibration of LSSL-5400; Feed Gas Knock Out Drum, Amine T-2	Level Switch		Magnetrol			1		





77	Service and Calibration of LSHH-5502; V-5501, Dehydration T-2	Level Switch				Magnetrol			1		
78	Service and Calibration of LSHH-5504A; F-5501A, Dehydration T-2	Level Switch				Magnetrol			1		
79	Service and Calibration of LSHH-5504B; F-5501B, Dehydration T-2	Level Switch				Magnetrol			1		
80	Service and Calibration of LSHH-5506; V-5503, Dehydration T-2	Level Switch				Magnetrol			1		
81	Service and Calibration of LSL-8001; START UP ELECTRIC HEATER ( E-8001)	Level Switch				Magnetrol			1		
82	Service and Calibration of LSHH-8001; START UP ELECTRIC HEATER	Level Switch				Magnetrol			1		
83	Service and Calibration of LSL-8002; LP Fuel Gas Knock Out Pot	Level Switch				Magnetrol			1		
84	Service and Calibration of LSHH-8002; LP Fuel Gas Knock Out Pot	Level Switch				Magnetrol			1		
85	Service and Calibration of LSL-8101; HOT OIL EXPANSION VESSEL	Level Switch				Magnetrol			1		
86	Service and Calibration of LSHH-8101; HOT OIL EXPANSION VESSEL	Level Switch				Magnetrol			1		
87	Service and Calibration of LSL-8201A; Flare Knock Out Drum	Level Switch				Magnetrol			1		
88	Service and Calibration of LSL-8201B; Flare Knock Out Drum	Level Switch				Magnetrol			1		
89	Service and Calibration of LSHH-8201A; Flare Knock Out Drum	Level Switch				Magnetrol			1		
90	Service and Calibration of LSHH-8201B; Flare Knock Out Drum	Level Switch				Magnetrol			1		
91	Service and Calibration of LSL-8301; SLOP VESSEL V-8301	Level Switch				Magnetrol			1		
92	Service and Calibration of LSHH-8302;	Level Switch				Magnetrol			1		
93	Service and Calibration of LSH-9801; Cooling Water	Level Switch				SOR			1		
94	Service and Calibration of LSHH-4100, Slug Catcher & Separator Area	Level Switch				SOR			1		
95	Service and Calibration of LSL-4100, Slug Catcher & Separator Area	Level Switch				SOR			1		
96	Service and Calibration of LSHH-4101, Slug Catcher & Separator Area	Level Switch				SOR			1		
97	Service and Calibration of LSL-4101, Slug Catcher & Separator Area	Level Switch				SOR			1		
98	Service and Calibration of LSHH-4201, K-Production Separator	Level Switch				OFFICINE OROBIC			1		
99	Service and Calibration of LSL-4201, K-Production Separator	Level Switch				OFFICINE OROBIC			1		
100	Service and Calibration of LSHH-5201, T-Production Separator	Level Switch				OFFICINE OROBIC			1		
101	Service and Calibration of LSL-5201, T-Production Separator	Level Switch				OFFICINE OROBIC			1		
<b>DEHYDRATION UNIT KCVs (TESTING &amp; OVERHAULING)</b>											
1	Overhauling and Testing of KCV-4501A; Regeneration Gas Outlet Tower V-4502A,	ON/OFF Valve	6"	RJ 900#	FLUICON	Removal from line, inspection/testing, dismantling for rectification / machining / part replacement (if required), Pressure testing, calibration,	All Tools, consumables, calibration & testing equipment (including pressure test bench), Lathe		1		
2	Overhauling and Testing of KCV-4501B; Regeneration Gas Outlet Tower V-4502B,	ON/OFF Valve	6"	RJ 900#	FLUICON				1		
3	Overhauling and Testing of KCV-4504A; Regeneration Gas Inlet Tower V-4502A,	ON/OFF Valve	6"	RJ 900#	FLUICON				1		
4	Overhauling and Testing of KCV-4504B; Regeneration Gas Inlet Tower V-4502B,	ON/OFF Valve	6"	RJ 900#	FLUICON				1		

5	Overhauling and Testing of KCV-4502A; Inlet Gas Tower V-4502A, Dehydration T-1	ON/OFF Valve	12"	RJ 900#	FLUICON	re-installation, commissioning and functional testing of valve. integrity checks of actuator, servicing of limit switches, SOVs, and Air filter/ regulators. Provision of soft and hard copies of assignments and certifications. Blind flanges of required ratings to be arranged by contractor used for pressure testing.	Machine will be in contractor's scope. Gaskets and Valve spares will be provided by OGDCL Instrument Team.	1		
6	Overhauling and Testing of KCV-4502B; Inlet Gas Tower V-4502B, Dehydration T-1	ON/OFF Valve	12"	RJ 900#	FLUICON			1		
7	Overhauling and Testing of KCV-4503A; Outlet Gas Tower V-4502A, Dehydration T-1	ON/OFF Valve	12"	RF 600#	FLUICON			1		
8	Overhauling and Testing of KCV-4503B; Outlet Gas Tower V-4502B, Dehydration T-1	ON/OFF Valve	12"	RF 600#	FLUICON			1		
9	Overhauling and Testing of KCV-5501A; Regeneration Gas Outlet Tower V-5502A,	ON/OFF Valve	6"	RJ 900#	FLUICON			1		
10	Overhauling and Testing of KCV-5501B; Regeneration Gas Outlet Tower V-5502B,	ON/OFF Valve	6"	RJ 900#	FLUICON			1		
11	Overhauling and Testing of KCV-5504A; Regeneration Gas Inlet Tower V-5502A,	ON/OFF Valve	6"	RJ 900#	FLUICON			1		
12	Overhauling and Testing of KCV-5504B; Regeneration Gas Inlet Tower V-5502B,	ON/OFF Valve	6"	RJ 900#	FLUICON			1		
13	Overhauling and Testing of KCV-5502A; Inlet Gas Tower V-5502A, Dehydration T-2	ON/OFF Valve	12"	RJ 900#	FLUICON			1		
14	Overhauling and Testing of KCV-5502B; Inlet Gas Tower V-5502B, Dehydration T-2	ON/OFF Valve	12"	RJ 900#	FLUICON			1		
15	Overhauling and Testing of KCV-5503A; Outlet Gas Tower V-5502A, Dehydration T-2	ON/OFF Valve	12"	RF 600#	FLUICON			1		
16	Overhauling and Testing of KCV-5503B; Outlet Gas Tower V-5502B, Dehydration T-2	ON/OFF Valve	12"	RF 600#	FLUICON			1		
17	Overhauling and Testing of KCV-9806; Cooling Water	ON/OFF Valve	4"	RF 150#	FISHER			1		

**TRVs (THERMAL RELIEF VALVES) - OVERHAULING & CALIBRATION**

1	Overhauling and Calibration of TRV-6206; Bullet Area	Thermal Relief Valve	0.75" / 1"	RF 300# / RF 150#	GE	Removal from location, Pressure testing, record "as found set" value (Psig/Bar), In case of variation from set pressure, dismantling for overhauling / machining / rectification. Calibration and re-installation. Provision of soft and hard copy of assignments and certifications.	All Tools , consumables, calibration & test equipment (including Pressure Test Bench), Lathe Machine will be in contractor's scope. Flange Gaskets to be provided by OGDCL Instrument Team.	1		
2	Overhauling and Calibration of TRV-6207; Bullet Area	Thermal Relief Valve	0.75" / 1"	RF 300# / RF 150#	GE			1		
3	Overhauling and Calibration of TRV-6208; Bullet Area	Thermal Relief Valve	0.75" / 1"	RF 300# / RF 150#	GE			1		
4	Overhauling and Calibration of TRV-6209; Bullet Area	Thermal Relief Valve	0.75" / 1"	RF 300# / RF 150#	GE			1		
5	Overhauling and Calibration of TRV-6211; Bullet Area	Thermal Relief Valve	0.75" / 1"	RF 300# / RF 150#	GE			1		
6	Overhauling and Calibration of TRV-6212; Bullet Area	Thermal Relief Valve	0.75" / 1"	RF 300# / RF 150#	GE			1		
7	Overhauling and Calibration of TRV-6213; Bullet Area	Thermal Relief Valve	0.75" / 1"	RF 300# / RF 150#	GE			1		
8	Overhauling and Calibration of TRV-6220; Bullet Area	Thermal Relief Valve	0.75" / 1"	RF 300# / RF 150#	GE			1		
9	Overhauling and Calibration of TRV-6224; Bullet Area	Thermal Relief Valve	0.75" / 1"	RF 300# / RF 150#	GE			1		
10	Overhauling and Calibration of TRV-6228; Bullet Area	Thermal Relief Valve	0.75" / 1"	RF 300# / RF 150#	GE			1		

**PSVs (PRESSURE SAFETY VALVES) - OVERHAULING & CALIBRATION**

1	Overhauling and Calibration of PSV-4400; Feed Gas Knock Out Drum, Amine Train-1	Pressure Safety Valve	4" / 6"	RF 600# / RF 150#				1		
2	Overhauling and Calibration of PSV-4402; Feed Gas Filter Coalescer, Amine Train-1	Pressure Safety Valve	4" / 6"	RF 600# / RF 150#				1		
3	Overhauling and Calibration of PSV-4404; Amine Absorber, Amine Train-1	Pressure Safety Valve	4" / 6"	RF 600# / RF 150#				1		
4	Overhauling and Calibration of PSV-4406; Treated Gas Knock Out Drum, Amine Train-1	Pressure Safety Valve	4" / 6"	RF 600# / RF 150#				1		
5	Overhauling and Calibration of PSV-4407; Fuel Gas Absorber, Amine Train-1	Pressure Safety Valve	6" / 10"	RF 300# / RF 150#				1		



25	Overhauling and Calibration of PSV-5402; Feed Gas Filter Coalescer, Amine T-2	Pressure Safety Valve	4" / 6"	RF 600# / RF 150#		1		
26	Overhauling and Calibration of PSV-5404; Amine Absorber, Amine T-2	Pressure Safety Valve	4" / 6"	RF 600# / RF 150#		1		
27	Overhauling and Calibration of PSV-5406; Treated Gas Knock Out Drum, Amine T-2	Pressure Safety Valve	4" / 6"	RF 600# / RF 150#		1		
28	Overhauling and Calibration of PSV-5407; Fuel Gas Absorber, Amine T-2	Pressure Safety Valve	6" / 10"	RF 300# / RF 150#		1		
29	Overhauling and Calibration of PSV-5410; Amine Regenerator, Amine T-2	Pressure Safety Valve	6" / 8"	RF 150# / RF 150#		1		
30	Overhauling and Calibration of PSV-5413; Amine Regenerator Reflux Drum, Amine T-2	Pressure Safety Valve	6" / 8"	RF 150# / RF 150#		1		
31	Overhauling and Calibration of PSV-5415; Amine Storage Tank, Amine T-2	Pressure Safety Valve	8" / 10"	RF 150# / RF 150#		1		
32	Overhauling and Calibration of PSV-7205; CONDENSATE STABILIZER, LPG T-2	Pressure Safety Valve	2' / 3"	RF 300# / RF 150#		1		
33	Overhauling and Calibration of PSV-5502; Molecular Sieve Inlet Scrubber, LPG T-2	Pressure Safety Valve	3" / 4"	RF 600# / RF 150#		1		
34	Overhauling and Calibration of PSV-5503; Inlet Gas Absorber, LPG T-2	Pressure Safety Valve	4" / 6"	RF 300# / RF 150#		1		
35	Overhauling and Calibration of PSV-5506; De-Euthanizer Column, LPG T-2	Pressure Safety Valve	3" / 4"	RF 300# / RF 150#		1		
36	Overhauling and Calibration of PSV-5507; De-Euthanizer Reboiler, LPG T-2	Pressure Safety Valve	2" / 3"	RF 300# / RF 150#		1		
37	Overhauling and Calibration of PSV-5512; De-Botanizer Reboiler, LPG T-2	Pressure Safety Valve	1.5" / 3"	RF 300# / RF 150#		1		
38	Overhauling and Calibration of PSV-5513; De-Botanizer Reflux Drum, LPG T-2	Pressure Safety Valve	3" / 4"	RF 300# / RF 150#		1		
39	Overhauling and Calibration of PSV-5501; E-5503, Dehydration T-2	Pressure Safety Valve	0.75" / 1"	NPT 600# / NPT 300#		1		
40	Overhauling and Calibration of PSV-5502; V-5501, Dehydration T-2	Pressure Safety Valve	1" / 2"	RF 600# / RF 300#		1		
41	Overhauling and Calibration of PSV-5504A; V-5502A, Dehydration T-2	Pressure Safety Valve	1.5" / 3"	RTJ 900# / RTJ 300#		1		
42	Overhauling and Calibration of PSV-5504B; V-5502B, Dehydration T-2	Pressure Safety Valve	1.5" / 3"	RTJ 900# / RTJ 300#		1		
43	Overhauling and Calibration of PSV-5505; F-5508A, Dehydration T-2	Pressure Safety Valve	1.5" / 3"	RF 600# / RF 300#		1		
44	Overhauling and Calibration of PSV-5507; DRY GAS FILTER, Dehydration T-2	Pressure Safety Valve	1.5" / 2"	RTJ 900# / RF 300#		1		
45	Overhauling and Calibration of PSV-5508A; F-5508A, Dehydration T-2	Pressure Safety Valve	1" / 2"	RF 600# / RF 150#		1		
46	Overhauling and Calibration of PSV-5508B; F-5508B, Dehydration T-2	Pressure Safety Valve	1" / 2"	RF 600# / RF 150#		1		
47	Overhauling and Calibration of PSV-8001; Hp Fuel Gas Knock Out Pot	Pressure Safety Valve	4" / 6"	RF 300# / RF 150#		1		
48	Overhauling and Calibration of PSV-8002; LP Fuel Gas Knock Out Pot	Pressure Safety Valve	3" / 4"	RF150# / RF 150#		1		
49	Overhauling and Calibration of PSV-8101;	Pressure Safety Valve	1" / 2"	RF 300# / RF 150#		1		
50	Overhauling and Calibration of PSV- 4301;	Pressure Safety Valve	1.5" / 2"	RF 150# / RF 150#	GE	1		
51	Overhauling and Calibration of PSV-4100, Slug Catcher & Separator Area	Pressure Safety Valve	3" / 4"	RF 600# / RF 150#	GE	1		
52	Overhauling and Calibration of PSV-5100, Slug Catcher & Separator Area	Pressure Safety Valve	3" / 4"	RF 600# / RF 150#	GE	1		
53	Overhauling and Calibration of PSV-4200, Slug Catcher & Separator Area	Pressure Safety Valve	4" / 6"	RF 600# / RF 150#	GE	1		
54	Overhauling and Calibration of PSV-5200, Slug Catcher & Separator Area	Pressure Safety Valve	3" / 4"	RF 600# / RF 150#	GE	1		

SDVs/BDVs (TESTING & OVERHAULING)										
1	Maintenance & function testing of SDV-4504, E-4502 Dehydration T-1	Shutdown Valve	4"	RF 300#	SITINDUSTRIE	Removal from location, Pressure testing, record "as found set" value (Psig/Bar), In case of variation from set pressure, dismantling for overhauling / machining / rectification. Calibration and re-	All Tools , consumables, calibration & test equipment (including Pressure Test Bench), Lathe Machine will be in contractor's scope. Flange Gaskets to be	1		
2	Maintenance & function testing of BDV-4501, V-4502A Dehydration T-1	Shutdown Valve	4"	RTJ 900#	SITINDUSTRIE			1		
3	Maintenance & function testing of BDV-4502, F-4502A Dehydration T-1	Shutdown Valve	4"	RF 600#	SITINDUSTRIE			1		
4	Maintenance & function testing of SDV-5504, E-5502 Dehydration T-2	Shutdown Valve	4"	RF 300#	SITINDUSTRIE			1		
5	Maintenance & function testing of SDV-5501, V-5502A Dehydration T-2	Shutdown Valve	4"	RTJ 900#	SITINDUSTRIE			1		
6	Maintenance & function testing of BVDV-5502, F-5502A Dehydration T-2	Shutdown Valve	4"	RF 600#	SITINDUSTRIE			1		
PRESSURE TRANSMITTERS (CALIBRATION)										
1	Calibration of PT-4416	Pressure Transmitter			ROSEMOUNT	On Site Calibration as per provided range, tubing Cleaning/Flushing, Soft and hard copies of assignments and certifications to be provided by Contractor.	All Tools & calibration equipment required to perform complete job will be in contractor's scope.	1		
2	Calibration of PT-5416	Pressure Transmitter			ROSEMOUNT			1		
3	Calibration of PT-4508	Pressure Transmitter			ROSEMOUNT			1		
4	Calibration of PT-5508	Pressure Transmitter			ROSEMOUNT			1		
5	Calibration of PT-8406	Pressure Transmitter			ROSEMOUNT			1		
6	Calibration of PT-8407	Pressure Transmitter			ROSEMOUNT			1		
7	Calibration of PT-8408	Pressure Transmitter			ROSEMOUNT			1		
8	Calibration of PT-8409	Pressure Transmitter			ROSEMOUNT			1		
9	Calibration of PT-8410	Pressure Transmitter			ROSEMOUNT			1		
10	Calibration of PT-8411	Pressure Transmitter			ROSEMOUNT			1		
11	Calibration of PT-8412	Pressure Transmitter			ROSEMOUNT			1		
12	Calibration of PT06313A Sale Gas Compressor/Turbine A	Pressure Transmitter						1		
13	Calibration of PT06313B Sale Gas Compressor/Turbine B	Pressure Transmitter						1		
14	Calibration of PT06313C Sale Gas Compressor/Turbine C	Pressure Transmitter						1		
15	Calibration of PIT-4509	Pressure Transmitter						1		
16	Calibration of PIT-5509	Pressure Transmitter						1		
17	Calibration of PIT-152A Sale Gas Compressor/Turbine A	Pressure Transmitter						1		
18	Calibration of PIT-152B Sale Gas Compressor/Turbine B	Pressure Transmitter						1		
19	Calibration of PIT-152C Sale Gas Compressor/Turbine C	Pressure Transmitter						1		
20	Calibration of PIT-153A Sale Gas Compressor/Turbine A	Pressure Transmitter						1		
21	Calibration of PIT-153B Sale Gas Compressor/Turbine B	Pressure Transmitter						1		
22	Calibration of PIT-153C Sale Gas Compressor/Turbine C	Pressure Transmitter						1		
TEMPERATURE TRANSMITTERS (SERVICE & CALIBRATION)										
1	Service and Calibration of TT-4434	Temperature Transmitter			ROSEMOUNT	Thermowell cleaning, Integrity testing of sensor, workshop calibration and commissioning. Soft and hard copies of assignments and certifications to be	All Tools & calibration equipment required to perform complete job will be in contractor's	1		
2	Service and Calibration of TIT-4514	Temperature Transmitter			ROSEMOUNT			1		
3	Service and Calibration of TIT-4509	Temperature Transmitter			ROSEMOUNT			1		
4	Service and Calibration of TIT-4506	Temperature Transmitter			ROSEMOUNT			1		
5	Service and Calibration of TT-5434	Temperature Transmitter			ROSEMOUNT			1		
6	Service and Calibration of TIT-5506	Temperature Transmitter			ROSEMOUNT			1		
7	Service and Calibration of TIT-5514	Temperature Transmitter			ROSEMOUNT			1		



8	Service and Calibration of TIT-5509	Temperature Transmitter			ROSEMOUNT	provided by Contractor.	scope.	1				
9	Service and Calibration of TT-8401	Temperature Transmitter			ROSEMOUNT			1				
10	Service and Calibration of TT-8402	Temperature Transmitter			ROSEMOUNT			1				
11	Service and Calibration of TT-8403	Temperature Transmitter			ROSEMOUNT			1				
12	Service and Calibration of TT-8404	Temperature Transmitter			ROSEMOUNT			1				
13	Service and Calibration of TT-8405	Temperature Transmitter			ROSEMOUNT			1				
14	Service and Calibration of TT-8406	Temperature Transmitter			ROSEMOUNT			1				
15	Service and Calibration of TIT-4507; Gas Temperature to Regen. Gas Pre-Heater E-4501, Dehydration T-1	Temperature Transmitter			Endress+Hauser			1				
16	Service and Calibration of TIT-4513; Gas Temperature from Regeneration Gas Pre-Heater E-4502, Dehydration T-1	Temperature Transmitter			Endress+Hauser			1				
17	Service and Calibration of TIT-5507; Gas Temperature to Regen. Gas Pre-Heater E-5501, Dehydration T-2	Temperature Transmitter			Endress+Hauser			1				
18	Overhauling of TIT-5513; Gas Temperature from Regeneration Gas Pre-Heater E-5502, Dehydration T-2	Temperature Transmitter			Endress+Hauser			1				
<b>DP &amp; FLOW TRANSMITTERS (SERVICE &amp; CALIBRATION)</b>												
1	Calibration of PDIT-5504	DP Transmitter						On Site Calibration as per provided range, Instrument Tubing Cleaning/Flushing. Soft and hard copies of assignments and certifications to be provided by Contractor.	All Tools & calibration equipment required to perform complete job will be in contractor's scope	1		
2	Calibration of PDIT-5505A	DP Transmitter								1		
3	Calibration of PDIT-5505B	DP Transmitter								1		
4	Calibration of PDIT-4504	DP Transmitter								1		
5	Calibration of PDIT-4505A	DP Transmitter								1		
6	Calibration of PDIT-4505B	DP Transmitter								1		
7	Calibration of PDIT-4506	DP Transmitter				1						
8	Calibration of PDIT-5506	DP Transmitter				1						
9	Calibration of FIT-4504	Flow Transmitter				1						
10	Calibration of FIT-5504	Flow Transmitter				1						
11	Calibration of FIT-155A Sale Gas Compressor/Turbine A	Flow Transmitter				1						
12	Calibration of FIT-155B Sale Gas Compressor/Turbine B	Flow Transmitter				1						
13	Calibration of FIT-155C Sale Gas Compressor/Turbine C	Flow Transmitter				1						
14	Calibration of FIT-156A Sale Gas Compressor/Turbine A	Flow Transmitter				1						
15	Calibration of FIT-156B Sale Gas Compressor/Turbine B	Flow Transmitter				1						
16	Calibration of FIT-156C Sale Gas Compressor/Turbine C	Flow Transmitter				1						
17	Calibration of Coriolis Mass flow meter by Certified Third Party.	Flow Transmitter				6						
<b>GAS &amp; FLAME DETECTORS - CALIBRATION &amp; FUNCTION TEST</b>												
1	Function Test of FS-4510 Flame Sensor LPG Unit	Flame Detector			MSA	Functional testing using IR Test Lamp/ Test Magnet. Soft and hard copies of assignments and certifications to be provided by Contractor.	Tools including IR Test Lamp / Test Magnet, calibration equipment required to perform complete job is in contractor scope.	1				
2	Function Test of FS-7107A Flame Sensor Condensate Stabilization Unit	Flame Detector			MSA			1				
3	Function Test of FS-7107B Flame Sensor Condensate Stabilization Unit	Flame Detector			MSA			1				
4	Function Test of FD-8001 Flame Detector Fuel Gas	Flame Detector			MSA			1				
5	Function Test of FD-8101 Flame Detector Hot Oil	Flame Detector			MSA			1				



45	Function Test of FDI-24 Flame Detector Infrared	Flame Detector			Honeywell			1		
46	Function Test of FDI-25 Flame Detector Infrared	Flame Detector			Honeywell			1		
47	Function Test of FDI-26 Flame Detector Infrared	Flame Detector			Honeywell			1		
48	Function Test of FD-01 Flame Detector Sale Gas Compressor A	Flame Detector			Det-Tronics			1		
49	Function Test of FD-02 Flame Detector Sale Gas Compressor A	Flame Detector			Det-Tronics			1		
50	Function Test of FD-03 Flame Detector Sale Gas Compressor A	Flame Detector			Det-Tronics			1		
51	Function Test of FD-04 Flame Detector Sale Gas Compressor B	Flame Detector			Det-Tronics			1		
52	Function Test of FD-05 Flame Detector Sale Gas Compressor B	Flame Detector			Det-Tronics			1		
53	Function Test of FD-06 Flame Detector Sale Gas Compressor B	Flame Detector			Det-Tronics			1		
54	Function Test of FD-07 Flame Detector Sale Gas Compressor B	Flame Detector			Det-Tronics			1		
55	Function Test of FD-08 Flame Detector Sale Gas Compressor B	Flame Detector			Det-Tronics			1		
56	Function Test of FD-09 Flame Detector Sale Gas Compressor B	Flame Detector			Det-Tronics			1		
57	Testing of smoke detectors of FM200	Smoke Detector						35		
58	Functional test of FM200	Control System						1		
<b>PRESSURE &amp; TEMPERATURE SWITCHES (SERVICE &amp; CALIBRATION)</b>										
1	Calibration of PSHH-4100, Slug Catcher & Separator Area	Pressure Switch				Dismantling, Inspection, calibration of switch at workshop and re-installation. Soft and hard copies of assignments and certifications to be provided by Contractor.	All Tools & calibration equipment required to perform complete job will be in contractor's scope	1		
2	Calibration of PSHH-5100 , Slug Catcher & Separator Area	Pressure Switch						1		
3	Calibration of PSHH-4400 Amine Regenerator	Pressure Switch						1		
4	Calibration of PSL-4400 Feed Gas Knock Out Drum	Pressure Switch						1		
5	Calibration of PSHH-5400 Amine Regenerator	Pressure Switch						1		
6	Calibration of PSL-5400 Feed Gas Knock Out Drum	Pressure Switch						1		
7	Calibration of PSHH-4510; Turbo Expander, LPG Train-1	Pressure Switch						1		
8	Calibration of PSHH-5510; Turbo Expander, LPG T-2	Pressure Switch						1		
9	Calibration of PSHH-8001; Hp Fuel Gas Knock Out Pot	Pressure Switch						1		
10	Calibration of PSHH-8002; LP Fuel Gas Knock Out Pot	Pressure Switch						1		
11	Calibration of TSL-4500; Turbo Expander, LPG Train-1	Temperature Switch						1		
12	Calibration of TSL-5500; Turbo Expander, LPG T-2	Temperature Switch						1		
<b>TEMPERATURE GAUGE (SERVICE &amp; CALIBRATION)</b>										
1	Calibration of TI-4517; Gas Temperature to Regen. Gas Pre Heater E-4501, Dehydration T-1	Temperature Gauge				Dismantling, Inspection, workshop calibration	All Tools & calibration equipment	1		

2	Calibration of TI-4518; Gas Temperature from Regeneration Gas Pre-Heater E-4502, Dehydration T-1	Temperature Gauge				and re-installation. Soft and hard copies of assignments and certifications to be provided by Contractor.	required to perform complete job will be in contractor's scope	1			
3	Calibration of TI-5517; Gas Temperature to Regen. Gas Pre Heater E-5501, Dehydration T-2	Temperature Gauge						1			
4	Calibration of TI-5518; Gas Temperature from Regeneration Gas Pre-Heater E-5502, Dehydration T-2	Temperature Gauge						1			
<b>PANEL CLEANING &amp; TERMINATION TIGHTENING (CONTROL ROOM &amp; FIELD SIDE)</b>											
1	Panel cleaning and Termination Tightening of Cooling Water UCP, BMS Local Panel A/B/C, R.O. Plant UCP 1-5, Instrument Air Package (F86) A/B, N2 (F85) package A/B, Genset UCPs 1-6, TLAS A/B ,Overhead Compressor LCP A/B, Turboexpander LCP and MCP Panel A/B					Inspection / cleaning and termination tightening for different Control Panels in CCR and in Field. There are approx. 4200 loops for complete plant. For MCP Panel, the job involves some wiring modification also, which is to be advised by OGDCL Instrument Team.	All Tools required to perform complete job will be in contractor's scope	25			
2	Panel cleaning and Termination Tightening of Amine A/B, Dehydration A/B, LPG A/B, Hot Oil 01, Sales Gas Compressor A/B/C UCPs along with DCS Cabinets 1-6, ESD Cabinets 1-6 and PMS 01							23			
3	Cleaning of CCR HMI Workstations and DCS-ESD Server Cabinet							Cleaning & servicing of Workstations in CCR as well as of Server Cabinet.	13		
4	Junction Box Inspection, Checking for Moisture, Termination Tightening etc							Inspection, cleaning, termination tightening of Field JB's followed by proper sealing of the JB's. The total JB count is approx. 470 nos.	470		
<b>Total in PKR (exclusive of PST/ICT)</b>											

**Important Notes:**

- 1) The billing will be done at Actual work done.
- 2) All the jobs to be carried out at site by qualified and experienced Instrument Technicians supervised by Contractors supervisors.
- 3) No spares for PSVs / TRVs shall be provided except gaskets. Contractor shall fix the issues using lapping / machining / repair etc for mentioned PSVs / TRVs.
- 4) Gaskets and Spares of Control Valve and KCVs will be provided by OGDCL Instrument Team.
- 5) Specialized teams consisting of expert Termination Technicians shall be provided by contractor for Panel and JB end termination tightening jobs. For jobs involving critical panels, OGDCL representative will be dedicated for supervision. This job also involved proper numbering / tagging of wires that are not already numbered / tagged and the material required for this job will also be arranged by contractor.
- 6) After completing the mentioned activity on each of the listed instruments, proper tagging of that particular instrument will be in contractor's scope and material required for this job will also be arranged by contractor.