

OIL & GAS DEVELOPMENT COMPANY LIMITED



TENDER ENQUIRY NO. PROC-SERVICES/CB/P&P-4678/2020

**HIRING OF SERVICES FOR EXECUTION OF ATA-2020 JOBS AT
SINHORO GAS FIELD**

Note:

Bid bond of **PKR 500,000/- (Pak Rupees Five Hundred Thousand Only)** must be submitted with the technical bid. Please see tender documents for further detail.

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

**HIRING OF SERVICES FOR EXECUTION OF ATA-2020 JOBS AT
SINHORO GAS FIELD**

TERMS & CONDITIONS

Technical services are required for execution of Annual Turn Around (ATA-2020) jobs as per attached scope.

- 1- Tentative time for execution of ATA-2020 Sinjhor Gas Field is in Sept -2020, whereas duration for the execution of ATA will be approx. 15 days including depressurizing & start up.
- 2- OGDCL reserves the right to change (increase/decrease) the scope of the work at any time keeping in view the operational requirements.
- 3- Contractor must visit the site to confirm the provided scope of work by OGDCL for bidding and clarification of scope (if any).
- 4- Contractor will arrange Fabrication / Welding Jobs including NDT/Third party inspection wherever required.
- 5- Contractor's welding/fabrication, scaffolding and insulation crew should report at site 07 days prior to ATA schedule for Fabrication (Shop joints), Shifting and installation of scaffolding and removal of insulation. And also for pre work arrangement of replacement of coil of heater, (coil size 10ft dia and 38ft length). Detail of job is attached in attached Mechanical SOW.
- 6- Contractor's services will remain intact at site till completion of re-insulation, painting, final housekeeping etc
- 7- Contractor should have established with minimum Five (5) years of relevant working experience in Oil & Gas, Chemical and Fertilizer industries of repair and maintenance jobs and submit details of experience along with customer satisfaction/ completion certificate/verifiable documents etc.
- 8- The contractor should plan & control ATA activities (direct/associated) using Primavera and submit their planned schedule (Level -4) covering all the activities for carrying out ATA of Sinjhor Gas Field successfully with high level quality within stipulated time period. (Soft copy of Primavera Plan is mandatory). Contractor will also provide daily progress report during execution of ATA.
- 9- Contractor must depute its supervisors to Sinjhor Gas Field few days prior to ATA for bagging and tagging of material as per activity.
- 10- Only land (for placement of caravans) for lodging (accommodation) will be provided to the Contractor's Man Power.

- 11- In case of any delay in completion of ATA and startup of plant due to contractor. Contractor will be held responsible and will be liable for penalty as per company policy.
- 12- Provision of Nitrogen with pumping unit for purging and Pressure testing is in OGDCL scope.
- 13- All gaskets (Only for box up) and spare parts will be provided by OGDCL.

CONTRACTOR'S RESPONSIBILITIES

HSEQ

- 1- Contractor will follow OGDCL HSEQ Policy in addition to all governmental regulations applicable to the scope of work for implementation of safe execution of each activity with zero-injury. In case of any accident, OGDCL will not be liable for any claim like insurance etc.
- 2- HSEQ Rules & Regulations will be strictly observed. For complete compliance, contractor will get HSEQ system manual from OGDCL at the time of mobilization.
- 3- Contractor shall submit, before the start of ATA, the detailed documents as follows:
 - a. HSE Risk Assessment
 - b. JHA/JSAs of the relevant Jobs
 - c. Emergency Preparedness and Response Plan.
- 4- Contractor shall strictly follow the Work-to-Permit System and shall provide plan of activities in advance, submit THAs/JHAs where required and engage only certified staff for the hot jobs.
- 5- Contractor shall develop and ensure Toolbox Talk Program on Safety, Health and Environmental matters in daily HSE briefings by its HSEQ Rep.
- 6- Contractor shall immediately report to OGDCL representative all significant and important incidents involving fatality, injury, illness, environmental impacts, near hits, and/or hazardous situations.
- 7- Contractor shall submit to OGDCL representative an HSE Performance Review Report on regular basis.
- 8- Contractor will be responsible for housekeeping, clean up the trash, spills, food waste, spill of chemicals, oils, whereas potentially hazardous wastes to be immediately reported to OGDCL HSEQ representative. Further any used material will be transported to store yard by contractor.
- 9- Contractor shall provide orientation on Emergency Preparedness and Response Procedure to its team and ensure that its personnel are well aware of what procedures are in practice and who is to notify in the event of any emergency.
- 10- Arrangement of all the safety equipment & PPE's i.e. Gloves, Helmet, Safety glasses Harness, respirators etc. for contractor employees is contractor's responsibility.

- 11- Mobiles, photo camera, cigarettes, lighter etc. are prohibited in the plant premises and contractor should ensure this.
- 12- Contractor should arrange HSE I/C, supervisors, inspectors, first aid providers, hole watcher, rescuer, fireman and housekeeping man as per work plan activities.
- 13- Contractor will hire certified crane operator, scaffolder, rigger, drivers, welders, fabricators etc.
- 14- Each contractor's employee will wear its provided ID card in the premises of plant, ID card will be provided by the contractor displaying name & craft of each employee.
- 15- In case of any accident / emergency, OGDCL will provide only general first aid whereas any other medical treatment would be the responsibility of contractor.
- 16- In case of any injury, workmanship compensation of contractor's staff will be contractor's responsibility.

FIELD WORK

- 1) All Tools and consumables for the execution of each job will be Contractor's responsibility. Consumables include all the necessary items i.e. WD-40, Cotton rags, Hand Gloves, RTV, Contact cleaner, Belt dressing spray, Insulating Gloves etc. Contractor must submit a complete list of Tools & consumables to the client prior to ATA.
- 2) Transport of material / spares etc. from SGF-Store to Field (job execution site) will be contractor's responsibility. OGDCL will only issue the material from store.
- 3) Arrangement of Cranes, fork lifters, loading hiab (with Valid Third party certificates) suitable to carry out the activities within stipulated time frame will be contractor's responsibility. Contractor will also arrange fuel for operation of these vehicles.
- 4) Provision of electrical supply both at residence and plant for execution of all activities is contractor's responsibility.
- 5) Arrangement of Pump, hoses etc. for Flushing of Vessels will be contractor's responsibility.
- 6) Removal/Re-installation of insulation Cladding where applicable shall be the responsibility of Contractor.
- 7) The painting of repaired piping/vessel weld seams with primer (red oxide) and top coat with high build solids epoxy as per applicable code shall be the responsibility of Contractor. Contractor will also provide necessary arrangements for DFT testing of painted lines.
- 8) Contractor will arrange 24V explosion proof High RPM exhaust Fans for the ventilation of Vessels.
- 9) Contractor will arrange 24V explosion proof lighting arrangement inside the vessels.

- 10) All necessary arrangements for pressure testing of valves, PSV's, Pipe lines, tubes i.e. Test bench, Gaskets, blind flanges, Hose pipes, gauges etc. will be contractor's responsibility.
- 11) Facilities for the repair of manual valves, control valves & PSV's as per work scope requirement will be contractor's responsibility. Contractor will arrange necessary material for valve seats etc. Machining facility will be provided by OGDCL.
- 12) All calibration equipment/tools Hart communicator , milliamp source, Deadweight Tester. Pneumatic Calibrator , Multi meters ,Clamp Meters ,Earth Tester ,Megger etc. for the calibration of all instruments, transmitters, I/P convertors, Level trolls, switches. Control valves & PSV's along with electrical equipment etc, should be the responsibility of contractor.
- 13) Contractor will provide all the calibration certificates (Hard and Soft copy) of all the instruments which will be carried out in the ATA as per standard quality procedure.
- 14) Proper certification of lifting gears, cranes, lifters, crane operators, drivers etc. will be mandatory.
- 15) Contractor should arrange their own Photocopy machine.
- 16) Chemicals arrangement for miscellaneous cleaning jobs for valves, Heat exchangers, coolers, Vessels and Piping etc. will be responsibility of the contractor. The contractor will be responsible for safe handling and execution of chemical cleaning activities.
- 17) Scaffolding erection and dismantling along with scaffolding material for all the work at height jobs will be contractor's responsibility.
- 18) Contractor will be responsible for execution of refractory repair work (preferably from Refra-Products) inside vessels, Heaters etc. Provision of material for refractory will be OGDCL's responsibility.
- 19) In case of emergency OGDCL's Machines, Tools, equipment are to be used by Contractor, if available; they will be charged on Market rate.
- 20) Hydra tight equipment along with operator will be contractor responsibility.
- 21) Arrangement of Electrical Supply Boards/Cables/Lighting/Electrical Tools along with Miniature Circuit Breakers (MCB), Molded Case Circuit Breakers(MCCB) and Earth leakage circuit breaker (ACB) to provide electrical supply/Lighting at different work location as per HSE standard (such as insulation of Electrical Tools where required etc) will be responsibility of the contractor.
- 22) Arrangement of Pneumatic tools for confined spaces (Vessel and Columns).
- 23) Long tail wire brush for internal cleaning of Level glasses or chemical cleaning agents will be arranged by the contractor.
- 24) Contractor's manpower will remain at site for complete Leak Test and complete plant start up.

- 25) OGDCL can replace any activity with another activity of the same scope.
- 26) After completion of each activity, work order will be duly signed from concerned maintenance sections, Process/operation section and contractor's area supervisor. OGDCL work order system to be followed.
- 27) Site administration personnel with associated resources like computers, photocopiers etc.
- 28) The technical manpower must be qualified / skilled and have at least Ten (10) years of experience in its trade in the field of Oil & Gas/Petrochemical plants. Contractor skilled manpower may be interviewed by OGDCL professionals (Mechanical/Electrical/Instrument). Evaluation of all the short listed skilled persons will be carried out by OGDCL well before the ATA. Replacement of Skilled personnel will be done with approval of OGDCL. OGDCL reserves the right to replace any person at any time.
- 29) All welders must be well experienced. Documentary evidence to be provided.
- 30) Locals may be given preference while hiring of skilled/unskilled manpower. However by controlling to local hired labour is contractor's responsibility.
- 31) Arrangement of diesel engine driven welding machines is contractor's responsibility.
- 32) Provision of general/routine tool kit to the hired staff. (Tools like spanner sets, striking/spud spanners (24mm to 65 mm), hammers, wrenches, adjustable, ratchet sets, shackles, slings, eye bolts etc)
- 33) Internal Cleaning of tube bundle and pressure vessels through chemical cleaning or lancer cleaning is in contractor scope as per requirement/recommended by OGDCL team at site.
- 34) 01 No Hydraulic bolt tensioner/bolt tightener along with operator (55 mm, 60 mm, 65 mm, 95 mm and 115 mm). Requirement of hydra tight is mentioned with relevant job. It may also be utilized for some control valves.
- 35) 01 No Hydro jetting machine along with operator (Engine driven).
- 36) Contractor shall arrange tools and skilled manpower with proper PPE's for control valve and PSV's pressure testing. Contractor must arrange reputable third party contractor for certification of all the PSV's.
- 37) Skilled machinists to be provided by contractor for isolation valves/Control valves repairing.
- 38) Lapping machine and expert machinist to be arranged by contractor.
- 39) Skilled tray fitter for trays dismantling/installation jobs of towers.
- 40) Sufficient Electrical cables (2/3/4 cores), electrical panels, Junction Boxes (having circuit breaker /protections available) for provision of electric supply to different area of plant for jobs like exhaust fans, lights, 24V lights in vessels, cutting, grinding etc will be in contractor scope.

41) Test equipment for electrical related jobs like, multi-meters, ampere meters, digital earth testers, bearing heater shall be arranged and provided by the contractor. (Calibration certificates shall be provided by the contractor for test equipment).

42) Tool kits to electricians and instrument fitters/technicians (Tools like pliers, cutters, star set, comb spanner set, L-key set screw drivers etc.).

43) Removal of Insulation/ cladding and re-installation by skilled insulators.

44) Security clearance of all the hired crew will be carried out by the contractor. OGDCL may provide security to contractor crew within the premises of plant during job execution only. Any issues/matters between the contractor and locals will be solely resolved by the contractor. The contractor will have no authority to terminate/hold the job due to any concerns/issues with locals. The contractor will have to deal with locals at its own. OGDCL will be not responsible for any incident.

45) Boarding / Lodging to all the hired crew will be provided by the contractor.

46) Pick and drop facility for hired crew is in contractor scope.

47) Contractor manpower must have CNIC and contractor identity card, and will follow OGDCL security policy.

48) Contractor will supply Cranes and Fork Lifters to accomplish the attached SOW within stipulated time frame. However, following minimum logistic support with proposed allocation is recommended, however contractor may arrange maximum logistic support as per their work arrangement/management.

S.No	Detail	Qty	Utilization
1	Hydraulic Crane, Capacity 60 Ton	01 No	Plant Various Areas Jobs
2	Hydraulic Crane, Capacity 40 Ton	01 No	Fabrication, Elect and inst.
3	Fork Lifters, Capacity 05 Ton	02 No	For Mech Jobs
4	Fork Lifter(Telescopic), Capacity 05 ton	01 No	Elect and inst. Jobs

In case of malfunctioning of crane/lifter, OGDCL will deduct the rental charges as per actual based on prevailing market rates.

HOT JOBS

- 1- Consumables for fabrication / welding / machining etc. will contractor's responsibility. Consumables includes all the necessary items i.e. Electrodes, cutting disc, grinding disc, Baby grinders, burr set, **Drill Machine along with Drill Bit**, DA, oxygen & Argon Cylinders etc.
- 2- Arrangement of Diesel Welding Generator & diesel will be in contractor's scope of work. Min. 04 Generators will be required at different locations.

- 3- Contractor shall be responsible for PRE HEAT & PWHT of welding jobs including PWHT machines, consumables and stress Relieving as per NDT results whenever required.
- 4- Contractor shall provide WPS & PQR for welding and fabrication jobs prior to execution.
- 5- NDT (DPT & RT) with required consumables & equipment for all welding jobs (Repair work/Modifications) will contractor's responsibility.
- 6- All modifications/change in piping will be painted after proper surface cleaning as per color codes.
- 7- Radiographic Inspection of new welding joints will be contractor's responsibility. OGDCL will specify the %age of welding joints to be inspected.
- 8- Contractor will be responsible for any blinding/De-blinding required for any Hot Job, which may not be foreseen at this stage.

GENERAL ARRANGEMENTS

- 9- Area in-charges should be graduate engineers with at least 05 years of Shutdown experience in Oil & Gas / petrochemical companies. Contractor must also provide QA / QC Engineers (Fabrication / welding, Piping, stationary equipment, Instrument and Electrical) with 05 years of Shutdown experience in relevant field.
- 10- All arrangement for boarding & lodging for contractor's man power will be contractors responsibility. Only 06 Officers Engg. Cadre will be provided temporary residence & messing.
- 11- Arrangement of Camp utilities electricity, Portable water and Portable washrooms/Toilets with their cleaning will be responsibilities of contactor.
- 12- Contractor must submit list of total no's of deployed manpower (cadre wise).
- 13- Contractor shall provide adequate meals / on-site refreshment twice in 12 hour shift & 01 time proper meal per shift as per requirement and laundry services to their employees.
- 14- Contractor should ensure his manpower has no any kind of ammunition and narcotics. (Security concern).
- 15- Contractor should deploy its security personals to control the manpower's in/out movement at plant and field main gate with the coordination of OGDCL security Incharge.
- 16- Pick & drop of any type for contactor's manpower will be his responsibility.

ATA-2020 WORK SCOPE EXPLANATORY NOTES FOR CONTRACTOR

- 1- The Company, **Oil & Gas Development Company Limited (OGDCL)** is interested in inviting bids for the provision of services (Mechanical, Electrical, and Instrumentation & Process etc.) at its Sinjhor Gas Field for the execution of the Annual Turnaround (ATA) 2020 maintenance activities from reputable companies in this field. Tentative schedule for execution of ATA-2020 Sinjhor Gas Field is in the Sept-2020, whereas duration for the execution of ATA will be **15** days including depressurizing & start up.
- 2- The contractor shall develop and submit a detailed work schedule including mobilization and preparatory works prior to shut down. OGDCL can change the time span & date of commencement as per operational requirement for ATA.
- 3- Due to shortage of gas in the country, the contractor will be responsible for immediate mobilization of manpower & resources to comply all jobs, as approval for plant shutdown being obtained from Petroleum Ministry.
- 4- The Contractor shall quote **Separate rate for each activity** against the quantities mentioned in the scope of work for repair works, modification jobs, repair/overhauling of individual manual valves and other services.
- 5- The work shall be done, completed in all respects in accordance with the requirements and Company's instructions/satisfaction at site.
- 6- The Quantities contained in the scope of work for each activity are estimated and liable to change (increase, decrease or omitted) when the work is actually executed. The Company does not expressly or by implication guarantee that actual quantities of work to be performed will correspond to the scope of work submitted with this tender document. **The payment to be made to the Contractor shall be based on the actual quantity of work performed.**
- 7- The Contractor shall be responsible for carrying out all work, complete in all respects, according to the scope of work. Any item of work required for completion but not expressly indicated in the scope shall be deemed to have been included in the **unit rates quoted by the Contractor**. The successful contractor will be required to submit detailed procedures for undertaking shutdown jobs especially repair works and modification jobs for Company's approval.
- 8- 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 & Nights shift) including any kind of holidays. Working hours for the day may be considered 12 hrs each for day and night shift excluding lunch breaks, Tea breaks and prayer times.

- 9- Most of the jobs will be carried out in the day shift however limited tasks will be carried out in the night shift keeping in view the HSEQ requirements.
- 10- Unit rates quoted by bidder shall be firm. No extra payments on account of escalation in prices due to any reason shall be admissible.
- 11- Contractor must quote unit rate per dia. inch of pipe welding & per Kg of structure welding that will also be applicable for any additional job during ATA.
- 12- The Contractor shall be paid only for the work duly approved by Company's representative. Any rework due to poor quality, demonstrated by NDT results & inspection by OGDCL shall be on Contractor's account.
- 13- Payment will be made as per actual work done after the completion of assigned ATA jobs against verified work order/invoices. Bidder to submit Annex C of provincial sale tax invoice with "submitted" status along with invoices.
- 14- 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.
- 15- Scope of work for all section is available from page# 67 to 102.

BIDDER QUALIFICATION:

1. 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 carried out through grading of the contractors according to marks calculated as per criteria attached. 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.
2. 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 services by contractor for maintenance jobs (which include copy of purchase orders, Contract, completion certificates etc) of at least Five 05 years in oil & gas or petrochemical plants. The supervisory manpower should have atleast 10 year of experience for ATA's in Oil & gas or petrochemical sector. Any ATA experience at other plants like sugar, textile,

cement, power generation units 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 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.
 - X. Lev-1 or 2 (MS Project/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.
3. In case of bid submitted by any Joint Venture Contractors, the experience of one Contractor will be considered for evaluation (for example 01-year experience of one Contractor & 01 year of the another JV Contractor will not be considered as two years. Similarly, two ATAs performed by one Contractor & one ATA by JV will not be considered as three ATAs. Contractor to provide JV agreement.
 4. Contractor declared as black listed at PPRA website will not be entertained.
 5. All interested parties / bidders are requested to visit at site to clarify / understand the scope of work if deem necessary. It will also helpful to understand the scope & submit the bid well in time.
 6. OGDCL requirement for bidders is to explicitly demonstrate in their "Technical Bid Submission" that they have allocated enough manpower, machinery, equipment, tools etc. to carry out all ATA activities safely and within planned timeline. Any bidders appearing to be short of resources in their technical bid submission may be rejected. It should also be noted that after award of ATA Contract/service order 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, 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.

Contractor Qualification Criteria (MARKS)

Sr #	Evaluation Item	Description of Criteria	Marks Calculations	Max. Marks	Min. Qualifying Marks	Remarks
1.	Contractor strength to execute Mechanical, Electrical & Instrumentation work.	Contractor should have past experience for execution of Mechanical, Electrical and Instrument works.	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 of oil & gas and petrochemical plants. 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.	Only ATA experience will be considered for marks calculation as per break up given in remarks. ATA's of oil & gas sector and petrochemicals plants will be considered only. <i>Break up of ATA jobs/work orders in specific year for specific plant will be considered as single ATA.</i>	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 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. No marks for in-progress status and expired certificates.
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,	1. 03Marks 2. 08 Marks	30	15	Established workshop: 02 Marks Established Office: 01 Marks Mechanical tools: 04 Marks. Instrument tools: 02 Marks. Electrical tools: 02 Marks.

		<p>3. Electrical). Equipment / Machinery (Valve test bench, hydro jetting machines, welding machines/ Generators)</p> <p>4. Cranes, fork lifters.</p> <p>5. Relevant professional CVs & site deployment Organogram for Mechanical, Instrument & Electrical works.</p>	<p>3. 03 Marks</p> <p>4. 06 Marks (04 + 02)</p> <p>5. 10 Marks.</p>			<p>01 Marks for each main equipment / Machinery.</p> <p>01 Crane (Min 30-50 tons). 02 Marks Max: 04 Marks</p> <p>01 fork lifters (Min 3 Tons). 01 Mark Max: 02 marks</p> <p>Organogram: 02 Mark.</p> <p>Mechanical CVs: 04 Mark</p> <p>Electrical CVs: 02Mark</p> <p>Instrument CVs: 02Mark</p>
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 & 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	<p>The Contractor having 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.</p>

Total Marks= 100

Minimum Qualifying Marks = 70

- 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 score minimum qualifying marks in each category as mentioned in above table. 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. In case of JV, JV agreement to be provided by contractor. Experience of both JV partners will be not added together for marks calculation in single category.*

References:

- ASME Sec II Part-C (Specifications for welding rods, electrodes and filler materials)
- 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

FINANCIAL RATE FORMAT

ATA-2020 WORK ORDERS OF MECHANICAL SECTION

Sr. No.	Work Order	Description	Asset	Asset Description	Location	Qty.	Quoted Rate
1	20-779	Regen gas cooler EM-2701 louvers lockers welding	51818	FIN FAN COOLER	27-E-2701	1	
2	20-778	Complete insulation of De-ethanizer column	51067	DE-ETHANISER	C-3001	1	
3	20-777	Paint of De-ethanizer column	51067	DE-ETHANISER	C-3001	1	
4	20-776	Replacement of Hot Oil Heater Coil.	51085	HOT OIL HEATER PACKAGES	V-6001A/B	1	
5	20-775	Internal inspection and cleaning of CPI Pit.	51001	SINJHORO PLANT	SNJ-PLANT	1	
6	20-774	Internal inspection and cleaning of Membrane Skid Elements	51001	SINJHORO PLANT	SNJ-PLANT	1	
7	20-773	Internal Inspection and servicing of Hot Oil Heater-B	51085	HOT OIL HEATER PACKAGES	V-6001A/B	1	
8	20-772	Internal Inspection and servicing of Hot Oil Heater-A	51085	HOT OIL HEATER PACKAGES	V-6001A/B	1	
9	20-761	Installation of block valve and Spectacle Blind in test separator line for manifold isolation.	51001	SINJHORO PLANT	SNJ-PLANT	1	
10	20-759	Installation of Spectacle Blind in LP line for manifold isolation.	51001	SINJHORO PLANT	SNJ-PLANT	1	
11	20-758	Installation of Spectacle Blind in MP line for manifold isolation.	51001	SINJHORO PLANT	SNJ-PLANT	1	
12	20-757	Installation of block valve and Spectacle Blind in HP line for manifold isolation.	51001	SINJHORO PLANT	SNJ-PLANT	1	
13	20-756	Provision of recycle gas for compressor K-	51001	SINJHORO PLANT	SNJ-PLANT	1	

		3001 from sales gas cooler down stream.					
14	20-755	Installation of valve at membrane sales gas line near membrane skid for maintaining SSG C sale gas sp	51001	SINJHORO PLANT	SNJ-PLANT	1	
15	20-754	Rectification of closed drain line (6") leakage.	51001	SINJHORO PLANT	SNJ-PLANT	1	
16	20-608	Replacement of Fuel Gas Filters of Sale Gas Compressors V-2912.	51066	SALES GAS COMPRESSOR PACKAGE	V-2912	1	
17	20-607	Replacement of Fuel Gas Filters of Sale Gas Compressors V-2911.	51065	SALES GAS COMPRESSOR PACKAGE	V-2911	1	
18	20-606	Replacement of Fuel Gas Filters of Sale Gas Compressors V-2910.	51064	SALES GAS COMPRESSOR PACKAGE	V-2910	1	
19	20-604	Replacement of Fuel Gas Filters of Feed Gas Compressors V-2003.	51047	FEED GAS COMPRESSOR PACKAGE	V-2003	1	
20	20-603	Replacement of Fuel Gas Filters of Feed Gas Compressors V-2002.	51046	FEED GAS COMPRESSOR PACKAGE	V-2002	1	
21	20-600	Replacement of Fuel Gas Filters of Feed Gas Compressors V-2001.	51045	FEED GAS COMPRESSOR PACKAGE	V-2001	1	
22	20-599	Replacement of Particle Filter at upstream of Membrane Skid.	52372	COALESCER FILTER	11-T-1100-01	1	
23	20-598	Replacement of Coalescer Filter at Membrane Skid.	52372	COALESCER FILTER	11-T-1100-01	1	
24	20-595	Internal Inspection & Cleaning of Oil Coolers of Radiators (Jacket Water & Auxiliary Water) of G3512	51001	SINJHORO PLANT	SNJ-PLANT	1	
25	20-592	Internal Inspection & Cleaning of Oil Coolers of Coolers (Table Type) of Jenbacher Gas Engine (02 no	51121	Power Generator	V-8001D	1	
26	20-591	Internal Inspection & Cleaning of Oil Coolers of After-coolers of Instrum	51001	SINJHORO PLANT	SNJ-PLANT	1	

		ent Air Compress ors(02 no)					
27	20-589	Internal Inspectio n & Cleaning of Oi l Coolers of Instru ment Air Compress ors (02 no.)	51001	SINJHORO PLANT	SNJ- PLANT	1	
28	20-588	Internal Inspectio n & Cleaning of Tu rbo- Expander Oil Cool er.	51061	TURBO EXPANDER/R E-COMPRESSOR	K-2801	1	
29	20-580	Internal Inspectio n & Cleaning of Fe ed Gas Compress or Cooler V-2003.	51047	FEED GAS COMPRESS OR PACKAGE	V-2003	1	
30	20-579	Internal Inspectio n & Cleaning of Fe ed Gas Compress or Cooler V-2002.	51046	FEED GAS COMPRESS OR PACKAGE	V-2002	1	
31	20-578	Internal Inspectio n & Cleaning of Fe ed Gas Compress or Cooler V-2001.	51045	FEED GAS COMPRESS OR PACKAGE	V-2001	1	
32	20-577	Internal Inspectio n & Cleaning of Sa le Gas Compresso r Cooler V-2912.	51066	SALES GAS COMPRES SOR PACKAGE	V-2912	1	
33	20-575	Internal Inspectio n & Cleaning of Sa le Gas Compresso r Cooler V-2911.	51065	SALES GAS COMPRES SOR PACKAGE	V-2911	1	
34	20-574	Internal Inspectio n & Cleaning of Sa le Gas Compresso r Cooler V-2910.	51064	SALES GAS COMPRES SOR PACKAGE	V-2910	1	
35	20-573	Internal Inspectio n & Cleaning of Sa le Gas Cooler of Membrane.	51001	SINJHORO PLANT	SNJ- PLANT	1	
36	20-572	Internal Inspectio n & Cleaning of D e- Butaniser Bottom Rundown Cooler E-3002-B.	52337	FAN	30-EF- 3002B	1	
37	20-571	Internal Inspectio n & Cleaning of D e- Butaniser Bottom Rundown Cooler E-3002-A.	52336	FAN	30-EF- 3002A	1	
38	20-569	Internal Inspectio n & Cleaning of D e- Butaniser Condens er E-3001-B	52305	FAN	30-EF- 3001B	1	

39	20-568	Internal Inspection & Cleaning of De-Butanizer Condenser E-3001-A	52304	FAN	30-EF-3001A	1	
40	20-565	Internal Inspection & Cleaning of Stabiliser Compressor Discharge Cooler .	51741	FIN FAN COOLER	26-E-2601	1	
41	20-564	Internal Inspection & Cleaning of Regeneration Gas Cooler.	51818	FIN FAN COOLER	27-E-2701	1	
42	20-531	Cleaning of De-Butanizer Feed/Bottoms Exchanger -D (04 no).	52343	EXCHANGER	30-EZ-3052C	1	
43	20-530	Cleaning of De-Butanizer Feed/Bottoms Exchanger -C (04 no).	52343	EXCHANGER	30-EZ-3052C	1	
44	20-529	Cleaning of De-Butanizer Feed/Bottoms Exchanger -B (04 no).	52342	EXCHANGER	30-EZ-3052B	1	
45	20-528	Cleaning of Stabilizer Feed Bottom Heat Exchanger-C (03 no).	51691	EXCHANGER	26-EZ-2611C	1	
46	20-527	Cleaning of Stabilizer Feed Bottom Heat Exchanger-B (03 no).	51690	EXCHANGER	26-EZ-2611B	1	
47	20-526	Cleaning of De-Ethanizer Reboiler .	52269	EXCHANGER	30-EZ-3021	1	
48	20-525	Cleaning of De-Butanizer Feed/Bottoms Exchanger -A (04 no).	52340	EXCHANGER	30-EZ-3052A	1	
49	20-524	Cleaning of De-Butanizer Reboiler.	52308	EXCHANGER	30-EZ-3051	1	
50	20-523	Cleaning of Stabilizer Feed Bottom Heat Exchanger-A (03 no).	51689	EXCHANGER	26-EZ-2611A	1	
51	20-521	Cleaning of Condensate Stabilizer Reboiler.	51704	EXCHANGER	26-EZ-2612	1	
52	20-520	Cleaning of Feed Gas Chiller.	51050	FEED GAS CHILLER	EZ-2511	1	
53	20-518	Cleaning of regeneration gas heater .	51838	REGENERATION GAS HEATER	EZ-2721	1	

54	20-513	Inspection and cleaning of 04 no Screens of Gas - Gas Exchanger	51060	GAS/GAS EXCHANGER	EZ-2811	1	
55	20-512	Fuel Gas Strainer of Power House Engines (V-8001 A/B/C/D)	52483	ENGINE-POWER GENERATION HOUSE B	80-E-8001B	1	
56	20-511	Inspection and cleaning of suction strainer of Diesel Distribution And Filling Pumps (GZ-5000 A/B)	52390	PUMP	50-GZ-5000A	1	
57	20-510	Inspection and cleaning of suction strainer of Water Reservoir Pumps (GZ-8802 A/B)	53331	PUMP	88-GZ-8802A	1	
58	20-509	Inspection and cleaning of suction strainer of Condensate Stock Tanks Pump (GZ-2004)	51315	PUMP	20-GZ-2004	1	
59	20-508	Inspection and cleaning of suction strainer of Produced Water Stock Tank Pump (GZ-2005)	51318	PUMP	20-GZ-2005	1	
60	20-507	Inspection and cleaning of suction strainer of Condensate Loading Pumps (GZ-7221 A/B/C)	52957	PUMP	72-GZ-7221A	1	
61	20-506	Inspection and cleaning of suction strainer of Fire Water Jockey Pumps (GZ-5111A/B)	52429	PUMP	51-GZ-5111A	1	
62	20-490	Inspection and cleaning of suction strainer of Closed Drain Pump (G-5501)	52484	PUMP-CLOSED DRAIN	55-G-5501	1	
63	20-489	Inspection and cleaning of suction strainer of LPG Return Pump (G-7102)	52944	PUMP	71-G-7102	1	
64	20-488	Inspection and cleaning of suction strainer of LPG Injection Pump (G-3301)	51071	LPG INJECTION PUMP	G-3301	1	
65	20-487	Inspection and cleaning of suction strainer of Warm Flare Condensate Pumps (GZ-6211-A/B)	52437	PUMP	51-GZ-5121A	1	

66	20-486	Inspection and cleaning of suction strainer of Fire Water Pump (GZ-5121-A/B)	52437	PUMP	51-GZ-5121A	1	
67	20-485	Inspection and cleaning of suction strainer LPG Loading Pump G-7101-A/B/C	52927	PUMP	71-G-7101A	1	
68	20-484	Inspection and cleaning of suction strainer of Hot Oil Circulation Pump GZ-6031 A/B/C (03 No.)	52601	PUMP	60-GZ-6031A	1	
69	20-483	Inspection and cleaning of suction strainer of Pump GZ-3041 A/B	52323	PUMP	30-GZ-3041A	1	
70	20-482	Inspection of inlet screens (02 no.) of Turbo-Expander & Re-compressor K-2801	51061	TURBO EXPANDER/RE-COMPRESSOR	K-2801	1	
71	20-481	Inspection and cleaning of inlet strainer at De-Ethanizer Compressor K-2721 A/B	51052	STABILISER GAS COMPRESSOR	K-2601	1	
72	20-480	Inspection and cleaning of inlet strainer at Stabilizer Compressor K-2601	51052	STABILISER GAS COMPRESSOR	K-2601	1	
73	20-478	Inspection and cleaning of inlet strainer at De-Ethanizer Compressor K-3001	51070	DE-ETHANIZER COMPRESSOR	K-3001	1	
74	20-477	Inspection and cleaning of suction strainer of Sale Gas Compressor V-2910 /11/12	51012	SALE GAS	SNJ-AREA-29	1	
75	20-476	Inspection and cleaning of suction strainer of Feed Gas Compressors V-2001/02/03	51045	FEED GAS COMPRESSOR PACKAGE	V-2001	1	
76	20-475	Inspection & Cleaning of Hot Oil Duplex Filter TZ-6031 A	52606	FILTER	60-TZ-6031B	1	
77	20-474	Inspection & Cleaning of Hot Oil Duplex Filter TZ-6031 A	52605	FILTER	60-TZ-6031A	1	

78	20-473	Inspection & Cleaning of Cold Flare Knockout Drum CZ-6221	51087	COLD FLARE K.O. DRUM	CZ-6221	1	
79	20-472	Inspection & Cleaning of Warm Flare Knockout Drum CZ-6211	51086	WARM FLARE K.O.DRUM	CZ-6211	1	
80	20-471	Inspection & Cleaning of De-Butanizer Reflux Drum CZ-3041	52290	DRUM	30-CZ-3041	1	
81	20-470	Inspection & Cleaning of Low Temperature Separator CZ-2822	51884	VESSEL	28-CZ-2822	1	
82	20-469	Inspection & Cleaning of Turbo-Expander Inlet Scrubber CZ-2821	51883	SCRUBBER	28-CZ-2821	1	
83	20-467	Internal Inspection & Cleaning of Regeneration Gas Scrubber CZ-2721	51056	REGENERATION GAS SCRUBBER	CZ-2721	1	
84	20-465	Internal inspection & cleaning of inlet separator CZ-2521	51049	INLET SEPARATOR	CZ-2521	1	
85	20-464	Inspection & Cleaning of Produced Water De-Gasser CZ-6311	51089	VESSEL	CZ-6311	1	
86	20-462	Inspection & Cleaning of Bitrism Separator V-101	51007	GATHERING FACILITY	SNJ-AREA-20	1	
87	20-461	Inspection & Cleaning of Jhakro Separator 100-V1	51007	GATHERING FACILITY	SNJ-AREA-20	1	
88	20-460	Inspection & Cleaning of Test Separator CZ-2004	51042	TEST SEPARATOR	CZ-2004	1	
89	20-459	Inspection & Cleaning of Low Pressure Separator CZ-2003	51041	LP SEPARATOR	CZ-2003	1	
90	20-458	Inspection & Cleaning of Medium Pressure Separator CZ-2002	51040	MP SEPARATOR	CZ-2002	1	
91	20-457	Cleaning & Inspection of High Pressure Separator CZ-2001	51039	HP SEPARATOR	CZ-2001	1	
92	20-456	Inspection & Cleaning of Instrument Air Dryer (VZ-5712 B)	52714	RECEIVER-AIR-INST./PLANT AIR PACKAGE	57-CZ-5712	1	

93	20-454	Glands leakage at isolating valve of PI-3004 at de-ethanizer hot oil return line.	51067	DE-ETHANISER	C-3001	1	
94	20-453	SDV-7101/C is to be installed instead of manual valve.	51001	SINJHORO PLANT	SNJ-PLANT	1	
95	20-452	Inspection & Cleaning of Instrument Air Dryer (VZ-5712 A)	52713	RECEIVER-AIR-INST./PLANT AIR PACKAGE	57-CZ-5711	1	
96	20-451	Suction valve of GZ-3041/B.	52323	PUMP	30-GZ-3041A	1	
97	20-447	"Check 2-1 for LP header (both flanges leakage and Passing)."	51041	LP SEPARATOR	CZ-2003	1	
98	20-445	Lala Jamali to LP header valve (leakage at both flanges)	51041	LP SEPARATOR	CZ-2003	1	
99	20-443	Lala Jamali to MP header valve (leakage at both flanges)	51040	MP SEPARATOR	CZ-2002	1	
100	20-442	"Jakro separator to LP HEADER (valve to be installed)."	51041	LP SEPARATOR	CZ-2003	1	
101	20-441	HD#02 to LP header connecting valve (leakage at both flanges).	51041	LP SEPARATOR	CZ-2003	1	
102	20-436	Chack 63-4 to LP header (leakage from both flanges)	51041	LP SEPARATOR	CZ-2003	1	
103	20-435	Jakhro well line inlet valve passing problem to be rectified.	51039	HP SEPARATOR	CZ-2001	1	
104	20-434	Rectification of MP header valve from Test Separator (Stuck valve)	51042	TEST SEPARATOR	CZ-2004	1	
105	20-433	Rectification of seat passing problem at Valve, upstream of gas filter separator.	51059	GAS FILTER SEPARATOR	TZ-2711	1	
106	20-432	Rectification of LP header to test separator valve. (stuck valve)	51042	TEST SEPARATOR	CZ-2004	1	

107	20-431	Suction valves of feed gas compressor. (Passing Problem)	51001	SINJHORO PLANT	SNJ-PLANT	1	
108	20-430	rectification of isolating valves of SDV-5201 (stuck valve)	51001	SINJHORO PLANT	SNJ-PLANT	1	
109	20-429	rectification of downstream of PV-5204	51001	SINJHORO PLANT	SNJ-PLANT	1	
110	20-428	Valve flange leakage to be rectified at hot oil inlet line valve of Debutnizer reboiler.	51068	DE-BUTANISER	C-3002	1	
111	20-427	glands leakage at downstream valves of FV-6012/6022.	51001	SINJHORO PLANT	SNJ-PLANT	1	
112	20-425	Glands leakage to be attended at both main discharge valves of hot oil.	51085	HOT OIL HEATER PACKAGES	V-6001A/B	1	
113	20-423	Replacement of 2003-PCV-02 at LP separator for flaring (downstream isolating valve is passing)	51041	LP SEPARATOR	CZ-2003	1	
114	20-421	2003-PCV-02 at LP separator for flaring (upstream isolating valve is passing)	51041	LP SEPARATOR	CZ-2003	1	
115	20-420	upstream and downstream isolating valves of Particle filters T-2741 (passing problem.)	52371	PARTICLE FILTER	11-T-1100-02	1	
116	20-419	Replacement of Downstream isolating valve of PCV-2745 (passing problem).	51001	SINJHORO PLANT	SNJ-PLANT	1	
117	20-418	Replacement of upstream isolating valve of PCV-2745 (stuck problem).	51001	SINJHORO PLANT	SNJ-PLANT	1	
118	20-416	Replacement of Isolating valve of PV-3026/B	51001	SINJHORO PLANT	SNJ-PLANT	1	
119	20-414	Replacement of Isolating valve of PV-3026/A	51001	SINJHORO PLANT	SNJ-PLANT	1	

120	20-411	Rectification of passing problem of a t HP filter discharge valve.	52393	FILTER	50-TZ-5000B	1	
121	20-408	Replacement of drain valve of feed inlet line of EZ-3021.	52269	EXCHANGER	C-3001	1	
122	20-407	"Closed drain valve of De-ethanizer needs replacement because of its passing problem. "	51067	DE-ETHANISER	C-3001	1	
123	20-405	Replacement of Particle Filter at upstream of Membrane Skid (T-2741)	52371	PARTICLE FILTER	11-T-1100-02	1	
124	20-404	Rectification of valve passing problem of LPG Dispatch pump G-7101-A suction valve	52927	PUMP	71-G-7101A	1	
125	20-402	Rectification of discharge valves of LPG dispatch line. (wheel stuck problem)	51029	LPG STORAGE & LOADING	SNJ-AREA-71	1	
126	20-400	Inspection & Cleaning of Membrane Guard Bed Vessel C-2901	52370	MURCURY GUARD BED	11-C-1100	1	
127	20-399	Post shutdown Activities of ATA-2020 at Sinjhoru Plant	51001	SINJHORO PLANT	SNJ-PLANT	1	
128	20-398	Pre-shutdown Activities of ATA-2020 at Sinjhoru Plant	51001	SINJHORO PLANT	SNJ-PLANT	1	
129	20-397	Inspection & Cleaning of Mercury Guard Bed C-2731	51057	MERCURY GUARD BED	CZ-2731	1	
130	20-396	Inspection & Cleaning of Molecular Sieve Vessel C-2702	51055	MOLECULAR SEIVE VESSEL	C-2701-2	1	
131	20-395	Inspection & Cleaning of Molecular Sieve Vessel C-2701	51764	VESSEL	27-C-2701	1	
132	20-394	Jakhro separator PSV by Pass Valve (replace to globe valve)	51007	GATHERING FACILITY	SNJ-AREA-20	1	
133	20-392	SDV-7109/C valve body stuck problem to be rectified.	51029	LPG STORAGE & LOADING	SNJ-AREA-71	1	

134	20-391	SDV-7103/C is to be installed instead of manual valve.	51029	LPG STORAGE & LOADING	SNJ-AREA-71	1	
135	20-390	Inspection of Flare Stack Tip	51023	FLARE PACKAGE	SNJ-AREA-62	1	
136	20-386	Internal Inspection & Cleaning of De-Butanizer Column C-3002	51068	DE-BUTANISER	C-3002	1	
137	20-385	Area-2 by pass line to sale gas ; valve near PT-2906. (passing problem).	52323	PUMP	30-GZ-3041A	1	
138	20-383	Area-2 by pass line to sale gas ; valve near PT-2906. (stem leakage problem).	51001	SINJHORO PLANT	SNJ-PLANT	1	
139	20-382	Rectification of feed gas compressor manual recycle valves. (Passing problem)	51045	FEED GAS COMPRESSOR PACKAGE	V-2001	1	
140	20-380	Replacement of Priming valve for GZ-3041-A/B.	52323	PUMP	30-GZ-3041A	1	
141	20-379	Replacement of discharge valve of GZ-3041/A.	52323	PUMP	30-GZ-3041A	1	
142	20-377	Replacement of Suction valve of GZ-3041/A.	52323	PUMP	30-GZ-3041A	1	
143	20-374	Replacement of discharge valve of GZ-3041/B.	52323	PUMP	30-GZ-3041A	1	
144	20-370	Inspection & Cleaning of De-Ethanizer Column C-3001	51067	DE-ETHANISER	C-3001	1	
145	20-362	Replacement of Drain valve of particle filter seat passing problem. (T-2901)	52371	PARTICLE FILTER	11-T-1100-02	1	
146	20-360	Replacement of isolating valves of L G of stabilizer compressor suction scrubber (CZ-2621)	51720	SCRUBBER	26-CZ-2621	1	

147	20-358	Particle filter (T-2741) to fuel gas heater (EP-5201) valve to be installed.	52371	PARTICLE FILTER	11-T-1100-02	1	
148	20-355	Inspection & Cleaning of Condensate Stabilizer Column C-2601	51051	CONDENSATE STABILISER	C-2601	1	
149	20-353	Rectification of Downstream isolating valves of LCV-2711. (Passing problem)	51838	REGENERATION GAS HEATER	EZ-2721	1	
150	20-351	Rectification of upstream isolating valves of LCV-2711. (Passing problem)	51838	REGENERATION GAS HEATER	EZ-2721	1	
151	20-350	By-Pass valve of condensate LCV-2004-2, of test separator (Passing/ glands leakage)	51042	TEST SEPARATOR	CZ-2004	1	
152	20-348	Downstream valve of K-2601 Suction scrubber LV leading to closed drain (passing)	51052	STABILISER GAS COMPRESSOR	K-2601	1	
153	20-342	Replacement of Filter Elements of Fuel Gas Filter Separator TZ-5211	51076	FUEL GAS SCRUBBER	CZ-5211	1	
154	20-339	Replacement of MP Separator Filter T-2002	52371	PARTICLE FILTER	11-T-1100-02	1	
155	20-338	Replacement of HP Separator Filter T-2001	52372	COALESCER FILTER	11-T-1100-01	1	
156	20-337	K-2601 Discharge Valve at upstream of discharge PG. (Passing problem)	51052	STABILISER GAS COMPRESSOR	K-2601	1	
157	20-336	MP separator vessel bottom drain valve	51040	MP SEPARATOR	CZ-2002	1	
158	20-332	Replacement of elements of Dust Filter.	51830	FILTER	27-TZ-2731	1	
159	20-329	Replacement of Elements of gas filter Separator	51059	GAS FILTER SEPARATOR	TZ-2711	1	
160	20-327	Replacement of Coalescer filter elements	51054	CONDENSATE FILTER /COALESCER	TZ-2612	1	

161	20-324	Replacement of Condensate Filter TZ-2611-B	51053	CONDENSATE FILTER	TZ-2611A/B	1	
162	20-323	Replacement of Condensate Filter TZ-2611-A	51053	CONDENSATE FILTER	TZ-2611A/B	1	
163	20-1291	Fabrication & Installation of Bypass Line of Mercury Guard Bed Note: Detailed BOQ and Isometrics will be shared by I/C Process so that timely material procurement can be planned by Mechanical Section.	51057	MERCURY GUARD BED	CZ-2731	1	

ATA-2020 WORK ORDERS OF ELECTRICAL SECTION

Sr.No	Work Order	Asset	Asset Descrptn:	ASSET TAG	Description	AREA CODE	QTY	Quoted Rate
SERVICING OF UPS & RECTIFIER SYSTEM								
1	20-1036	51140	UPS	82-U-9355	Annual Maintenance (ATA) - UPS / Battery Charging System / Rectifier	SNJ-81	1	
2	20-1035	53315	BATTERY CHARGER	82-P-8102B	Annual Maintenance (ATA) - UPS / Battery Charging System / Rectifier	SNJ-81	1	
3	20-1034	53314	BATTERY CHARGER	82-P-8102A	Annual Maintenance (ATA) - UPS / Battery Charging System / Rectifier	SNJ-81	1	
4	20-1033	51141	RECTIFIER SYSTEM	82-P-8102	Annual Maintenance (ATA) - UPS / Battery Charging System / Rectifier	SNJ-81	1	
5	20-1032	53318	BATTERY RACK	82-BAT-8102B	Annual Maintenance (ATA) - UPS / Battery Charging System / Rectifier	SNJ-81	1	
6	20-1031	53317	BATTERY BANK	82-BAT-8102A	Annual Maintenance (ATA) - UPS / Battery Charging System / Rectifier	SNJ-81	1	
INSPECTION,CHECKING & SERVICING OF BTD								
7	20-1030	53150	BTB	81-BTD-8012	Annual Maintenance (ATA) - Bus Tie Duct BTB	SNJ-81	1	
SERVICING & TESTING OF ACBs								

8	20-1029	53143	ACB	PS-8006-MCC	Annual Maintenance (ATA) - Air Circuit Breaker ACB	SNJ-81	1	
9	20-1028	53145	ACB	PG-8003	Annual Maintenance (ATA) - Air Circuit Breaker ACB	SNJ-81	1	
10	20-1027	53141	ACB	PS-8002-MCC	Annual Maintenance (ATA) - Air Circuit Breaker ACB	SNJ-81	1	
11	20-1026	53139	ACB	PG-8002	Annual Maintenance (ATA) - Air Circuit Breaker ACB	SNJ-81	1	
12	20-1025	53147	ACB	PG-8001D	Annual Maintenance (ATA) - Air Circuit Breaker ACB	SNJ-81	1	
13	20-1024	53135	ACB	PG-8001C	Annual Maintenance (ATA) - Air Circuit Breaker ACB	SNJ-81	1	
14	20-1023	53133	ACB	PG-8001B	Annual Maintenance (ATA) - Air Circuit Breaker ACB	SNJ-81	1	
15	20-1022	53131	ACB	PG-8001A	Annual Maintenance (ATA) - Air Circuit Breaker ACB	SNJ-81	1	
16	20-1021	53129	ACB	PS-8001-MCC	Annual Maintenance (ATA) - Air Circuit Breaker ACB	SNJ-81	1	
17	20-1020	53149	ACB	PS-8000-BTC2	Annual Maintenance (ATA) - Air Circuit Breaker ACB	SNJ-81	1	
18	20-1019	53137	ACB	PS-8000-BTC1	Annual Maintenance (ATA) - Air Circuit Breaker ACB	SNJ-81	1	
19	20-1018	53308	ACB	81-F5-8006	Annual Maintenance (ATA) - Air Circuit Breaker ACB	SNJ-81	1	
20	20-1017	53305	ACB	81-F28-8006	Annual Maintenance (ATA) - Air Circuit Breaker ACB	SNJ-81	1	
21	20-1016	53271	ACB	81-F22-8005	Annual Maintenance (ATA) - Air Circuit Breaker ACB	SNJ-81	1	
22	20-1015	53306	ACB	81-F06-8006	Annual Maintenance (ATA) - Air Circuit Breaker ACB	SNJ-81	1	
23	20-1014	53310	ACB	81-F01-8006	Annual Maintenance (ATA) - Air Circuit Breaker ACB	SNJ-81	1	
24	20-1013	53273	ACB	81-F01-8005	Annual Maintenance (ATA) - Air Circuit Breaker ACB	SNJ-81	1	
SERVICING OF MCC MODULES								
25	20-985	53303	MOTOR MODULE	MD-SPM006	Annual Maintenance (ATA) - Motor Modules	SNJ-81	1	
26	20-984	53297	MOTOR MODULE	MD-SPM005	Annual Maintenance (ATA) - Motor Modules	SNJ-81	1	

27	20-983	53296	MOTOR MODULE	MD-SPM004	Annual Maintenance (ATA) - Motor Modules	SNJ-81	1	
28	20-982	53291	MOTOR MODULE	MD-SPM003	Annual Maintenance (ATA) - Motor Modules	SNJ-81	1	
29	20-981	53285	MOTOR MODULE	MD-SPM002	Annual Maintenance (ATA) - Motor Modules	SNJ-81	1	
30	20-980	53254	MOTOR MODULE	MD-SPM001	Annual Maintenance (ATA) - Motor Modules	SNJ-81	1	
31	20-979	53206	MOTOR MODULE	MD-SP8001	Annual Maintenance (ATA) - Motor Modules	SNJ-81	1	
32	20-978	53241	MOTOR MODULE	MD-SP007	Annual Maintenance (ATA) - Motor Modules	SNJ-81	1	
33	20-977	53278	MOTOR MODULE	MD-MT9000B	Annual Maintenance (ATA) - Motor Modules	SNJ-81	1	
34	20-976	53279	MOTOR MODULE	MD-MT9000A	Annual Maintenance (ATA) - Motor Modules	SNJ-81	1	
35	20-975	53212	MOTOR MODULE	MD-KM3001	Annual Maintenance (ATA) - Motor Modules	SNJ-81	1	
36	20-974	53190	MOTOR MODULE	MD-KM2721B	Annual Maintenance (ATA) - Motor Modules	SNJ-81	1	
37	20-973	53184	MOTOR MODULE	MD-KM2721A	Annual Maintenance (ATA) - Motor Modules	SNJ-81	1	
38	20-972	53209	MOTOR MODULE	MD-KM2601	Annual Maintenance (ATA) - Motor Modules	SNJ-81	1	
39	20-971	53298	MOTOR MODULE	MD-GZ9000C	Annual Maintenance (ATA) - Motor Modules	SNJ-81	1	
40	20-970	53292	MOTOR MODULE	MD-GZ9000B	Annual Maintenance (ATA) - Motor Modules	SNJ-81	1	
41	20-969	53286	MOTOR MODULE	MD-GZ9000A	Annual Maintenance (ATA) - Motor Modules	SNJ-81	1	
42	20-968	53269	MOTOR MODULE	MD-GZ8802B	Annual Maintenance (ATA) - Motor Modules	SNJ-81	1	
43	20-967	53268	MOTOR MODULE	MD-GZ8802A	Annual Maintenance (ATA) - Motor Modules	SNJ-81	1	
44	20-966	53282	MOTOR MODULE	MD-GZ5422B	Annual Maintenance (ATA) - Motor Modules	SNJ-81	1	
45	20-965	53276	MOTOR MODULE	MD-GZ5422A	Annual Maintenance (ATA) - Motor Modules	SNJ-81	1	
46	20-964	53215	MOTOR MODULE	MD-GZ5111B	Annual Maintenance (ATA) - Motor Modules	SNJ-81	1	

47	20-963	53214	MOTOR MODULE	MD-GZ5111A	Annual Maintenance (ATA) - Motor Modules	SNJ-81	1	
48	20-962	53263	MOTOR MODULE	MD-GZ5000B	Annual Maintenance (ATA) - Motor Modules	SNJ-81	1	
49	20-961	53256	MOTOR MODULE	MD-GZ5000A	Annual Maintenance (ATA) - Motor Modules	SNJ-81	1	
50	20-960	53288	MOTOR MODULE	MD-GZ2005	Annual Maintenance (ATA) - Motor Modules	SNJ-81	1	
51	20-959	53249	MOTOR MODULE	MD-GZ2004	Annual Maintenance (ATA) - Motor Modules	SNJ-81	1	
52	20-958	53207	MOTOR MODULE	MD-GM7221C	Annual Maintenance (ATA) - Motor Modules	SNJ-81	1	
53	20-957	53174	MOTOR MODULE	MD-GM7221B	Annual Maintenance (ATA) - Motor Modules	SNJ-81	1	
54	20-956	53173	MOTOR MODULE	MD-GM7221A	Annual Maintenance (ATA) - Motor Modules	SNJ-81	1	
55	20-955	53162	MOTOR MODULE	MD-GM7103	Annual Maintenance (ATA) - Motor Modules	SNJ-81	1	
56	20-954	53161	MOTOR MODULE	MD-GM7102	Annual Maintenance (ATA) - Motor Modules	SNJ-81	1	
57	20-953	53154	MOTOR MODULE	MD-GM7101C	Annual Maintenance (ATA) - Motor Modules	SNJ-81	1	
58	20-952	53153	MOTOR MODULE	MD-GM7101B	Annual Maintenance (ATA) - Motor Modules	SNJ-81	1	
59	20-951	53152	MOTOR MODULE	MD-GM7101A	Annual Maintenance (ATA) - Motor Modules	SNJ-81	1	
60	20-950	53164	MOTOR MODULE	MD-GM7021	Annual Maintenance (ATA) - Motor Modules	SNJ-81	1	
61	20-949	53157	MOTOR MODULE	MD-GM6611	Annual Maintenance (ATA) - Motor Modules	SNJ-81	1	
62	20-948	53155	MOTOR MODULE	MD-GM6502	Annual Maintenance (ATA) - Motor Modules	SNJ-81	1	
63	20-947	53156	MOTOR MODULE	MD-GM6501	Annual Maintenance (ATA) - Motor Modules	SNJ-81	1	
64	20-946	53237	MOTOR MODULE	MD-GM6211B	Annual Maintenance (ATA) - Motor Modules	SNJ-81	1	
65	20-945	53236	MOTOR MODULE	MD-GM6211A	Annual Maintenance (ATA) - Motor Modules	SNJ-81	1	
66	20-944	53194	MOTOR MODULE	MD-GM6031C	Annual Maintenance (ATA) - Motor Modules	SNJ-81	1	

67	20-943	53189	MOTOR MODULE	MD-GM6031B	Annual Maintenance (ATA) - Motor Modules	SNJ-81	1	
68	20-942	53188	MOTOR MODULE	MD-GM6031A	Annual Maintenance (ATA) - Motor Modules	SNJ-81	1	
69	20-941	53239	MOTOR MODULE	MD-GM5501	Annual Maintenance (ATA) - Motor Modules	SNJ-81	1	
70	20-940	53179	MOTOR MODULE	MD-GM3302	Annual Maintenance (ATA) - Motor Modules	SNJ-81	1	
71	20-939	53178	MOTOR MODULE	MD-GM3301	Annual Maintenance (ATA) - Motor Modules	SNJ-81	1	
72	20-938	53177	MOTOR MODULE	MD-GM3041B	Annual Maintenance (ATA) - Motor Modules	SNJ-81	1	
73	20-937	53176	MOTOR MODULE	MD-GM3041A	Annual Maintenance (ATA) - Motor Modules	SNJ-81	1	
74	20-936	53211	MOTOR MODULE	MD-GM3001	Annual Maintenance (ATA) - Motor Modules	SNJ-81	1	
75	20-935	53235	MOTOR MODULE	MD-GM2801B	Annual Maintenance (ATA) - Motor Modules	SNJ-81	1	
76	20-934	53234	MOTOR MODULE	MD-GM2801A	Annual Maintenance (ATA) - Motor Modules	SNJ-81	1	
77	20-933	53191	MOTOR MODULE	MD-GM2721B	Annual Maintenance (ATA) - Motor Modules	SNJ-81	1	
78	20-932	53185	MOTOR MODULE	MD-GM2721A	Annual Maintenance (ATA) - Motor Modules	SNJ-81	1	
79	20-931	53208	MOTOR MODULE	MD-GM2601	Annual Maintenance (ATA) - Motor Modules	SNJ-81	1	
80	20-930	53233	MOTOR MODULE	MD-EP2802	Annual Maintenance (ATA) - Motor Modules	SNJ-81	1	
81	20-929	53232	MOTOR MODULE	MD-EP2801	Annual Maintenance (ATA) - Motor Modules	SNJ-81	1	
82	20-928	53238	MOTOR MODULE	MD-EM8002	Annual Maintenance (ATA) - Motor Modules	SNJ-81	1	
83	20-927	53204	MOTOR MODULE	MD-EM8001C2	Annual Maintenance (ATA) - Motor Modules	SNJ-81	1	
84	20-926	53203	MOTOR MODULE	MD-EM8001C1	Annual Maintenance (ATA) - Motor Modules	SNJ-81	1	
85	20-925	53202	MOTOR MODULE	MD-EM8001B2	Annual Maintenance (ATA) - Motor Modules	SNJ-81	1	
86	20-924	53201	MOTOR MODULE	MD-EM8001B1	Annual Maintenance (ATA) - Motor Modules	SNJ-81	1	

87	20-923	53200	MOTOR MODULE	MD-EM8001A2	Annual Maintenance (ATA) - Motor Modules	SNJ-81	1	
88	20-922	53199	MOTOR MODULE	MD-EM8001A1	Annual Maintenance (ATA) - Motor Modules	SNJ-81	1	
89	20-921	53163	MOTOR MODULE	MD-EM7103	Annual Maintenance (ATA) - Motor Modules	SNJ-81	1	
90	20-920	53165	MOTOR MODULE	MD-EM7021	Annual Maintenance (ATA) - Motor Modules	SNJ-81	1	
91	20-919	53159	MOTOR MODULE	MD-EM6501B	Annual Maintenance (ATA) - Motor Modules	SNJ-81	1	
92	20-918	53158	MOTOR MODULE	MD-EM6501A	Annual Maintenance (ATA) - Motor Modules	SNJ-81	1	
93	20-917	53183	MOTOR MODULE	MD-EM6001B	Annual Maintenance (ATA) - Motor Modules	SNJ-81	1	
94	20-916	53182	MOTOR MODULE	MD-EM6001A	Annual Maintenance (ATA) - Motor Modules	SNJ-81	1	
95	20-915	53180	MOTOR MODULE	MD-EM3302	Annual Maintenance (ATA) - Motor Modules	SNJ-81	1	
96	20-914	53172	MOTOR MODULE	MD-EM3002B	Annual Maintenance (ATA) - Motor Modules	SNJ-81	1	
97	20-913	53171	MOTOR MODULE	MD-EM3002A	Annual Maintenance (ATA) - Motor Modules	SNJ-81	1	
98	20-912	53170	MOTOR MODULE	MD-EM3001B	Annual Maintenance (ATA) - Motor Modules	SNJ-81	1	
99	20-911	53169	MOTOR MODULE	MD-EM3001A	Annual Maintenance (ATA) - Motor Modules	SNJ-81	1	
100	20-910	53261	MOTOR MODULE	MD-EM2901B	Annual Maintenance (ATA) - Motor Modules	SNJ-81	1	
101	20-909	53260	MOTOR MODULE	MD-EM2901A	Annual Maintenance (ATA) - Motor Modules	SNJ-81	1	
102	20-908	53231	MOTOR MODULE	MD-EM2801B	Annual Maintenance (ATA) - Motor Modules	SNJ-81	1	
103	20-907	53230	MOTOR MODULE	MD-EM2801A	Annual Maintenance (ATA) - Motor Modules	SNJ-81	1	
104	20-906	53192	MOTOR MODULE	MD-EM2721B	Annual Maintenance (ATA) - Motor Modules	SNJ-81	1	
105	20-905	53186	MOTOR MODULE	MD-EM2721A	Annual Maintenance (ATA) - Motor Modules	SNJ-81	1	
106	20-904	53168	MOTOR MODULE	MD-EM2701B	Annual Maintenance (ATA) - Motor Modules	SNJ-81	1	

107	20-903	531 67	MOTOR MODULE	MD-EM2701 A	Annual Maintenance (ATA) - Motor Modules	SNJ-81	1	
MOTORS FOR SERVICING JOB								
108	20-889	523 54	MOTOR	30-KM-3001	Annual Maintenance (ATA) - Motors	SNJ-30	1	
109	20-886	517 45	MOTOR	26-KM-2601	Annual Maintenance (ATA) - Motors	SNJ-26	1	
110	20-885	533 28	MOTOR	88-GM-8802B	Annual Maintenance (ATA) - Motors	SNJ-88	1	
111	20-884	533 27	MOTOR	88-GM-8802A	Annual Maintenance (ATA) - Motors	SNJ-88	1	
112	20-883	533 26	MOTOR	88-GM-8801B	Annual Maintenance (ATA) - Motors	SNJ-88	1	
113	20-882	533 25	MOTOR	88-GM-8801A	Annual Maintenance (ATA) - Motors	SNJ-88	1	
114	20-881	529 56	MOTOR	72-GM-7221C	Annual Maintenance (ATA) - Motors	SNJ-72	1	
115	20-880	529 55	MOTOR	72-GM-7221B	Annual Maintenance (ATA) - Motors	SNJ-72	1	
116	20-879	529 54	MOTOR	72-GM-7221A	Annual Maintenance (ATA) - Motors	SNJ-72	1	
117	20-878	529 47	MOTOR	71-GM-7103	Annual Maintenance (ATA) - Motors	SNJ-71	1	
118	20-877	529 46	MOTOR	71-GM-7102	Annual Maintenance (ATA) - Motors	SNJ-71	1	
119	20-873	526 52	MOTOR	63-GM-6303A	Annual Maintenance (ATA) - Motors	SNJ-63	1	
120	20-872	526 51	MOTOR	63-GM-6302B	Annual Maintenance (ATA) - Motors	SNJ-63	1	
121	20-871	526 50	MOTOR	63-GM-6302A	Annual Maintenance (ATA) - Motors	SNJ-62	1	
122	20-870	526 18	MOTOR	62-GM-6211B	Annual Maintenance (ATA) - Motors	SNJ-62	1	
123	20-869	526 17	MOTOR	62-GM-6211A	Annual Maintenance (ATA) - Motors	SNJ-54	1	
124	20-865	535 52	MOTOR	54-GM-5422B	Annual Maintenance (ATA) - Motors	SNJ-54	1	
125	20-864	535 51	MOTOR	54-GM-5422A	Annual Maintenance (ATA) - Motors	SNJ-33	1	
126	20-861	523 69	MOTOR	33-GM-3302	Annual Maintenance (ATA) - Motors	SNJ-33	1	

127	20-860	523 61	MOTOR	33-GM-3301	Annual Maintenance (ATA) - Motors	SNJ-33	1	
128	20-857	523 56	MOTOR	30-GM-3001	Annual Maintenance (ATA) - Motors	SNJ-30	1	
129	20-854	524 95	MOTOR	27-GM-2721B	Annual Maintenance (ATA) - Motors	SNj-27	1	
130	20-853	524 94	MOTOR	27-GM-2721A	Annual Maintenance (ATA) - Motors	SNj-27	1	
131	20-852	517 44	MOTOR	26-GM-2601	Annual Maintenance (ATA) - Motors	SNJ-26	1	
132	20-851	513 19	MOTOR	20-GM-2005	Annual Maintenance (ATA) - Motors	SNJ-20	1	
133	20-850	513 16	MOTOR	20-GM-2004	Annual Maintenance (ATA) - Motors	SNJ-20	1	
134	20-849	531 21	MOTOR	80-EM-8002	Annual Maintenance (ATA) - Motors	SNJ-80	1	
135	20-848	531 16	MOTOR	80-EM-8001D8S	Annual Maintenance (ATA) - Motors	SNJ-80	1	
136	20-847	531 15	MOTOR	80-EM-8001D7S	Annual Maintenance (ATA) - Motors	SNJ-80	1	
137	20-846	531 14	MOTOR	80-EM-8001D6R	Annual Maintenance (ATA) - Motors	SNJ-80	1	
138	20-845	531 13	MOTOR	80-EM-8001D5R	Annual Maintenance (ATA) - Motors	SNJ-80	1	
139	20-844	531 12	MOTOR	80-EM-8001D4R	Annual Maintenance (ATA) - Motors	SNJ-80	1	
140	20-843	531 11	MOTOR	80-EM-8001D3R	Annual Maintenance (ATA) - Motors	SNJ-80	1	
141	20-842	525 06	MOTOR	80-EM-8001D2S	Annual Maintenance (ATA) - Motors	SNJ-80	1	
142	20-841	531 10	MOTOR	80-EM-8001D2R	Annual Maintenance (ATA) - Motors	SNJ-80	1	
143	20-840	525 05	MOTOR	80-EM-8001D1S	Annual Maintenance (ATA) - Motors	SNJ-80	1	
144	20-839	531 09	MOTOR	80-EM-8001D1R	Annual Maintenance (ATA) - Motors	SNJ-80	1	
145	20-838	525 03	MOTOR	80-EM-8001C2	Annual Maintenance (ATA) - Motors	SNJ-80	1	
146	20-837	525 02	MOTOR	80-EM-8001C1	Annual Maintenance (ATA) - Motors	SNJ-80	1	
147	20-836	525 00	MOTOR	80-EM-8001B2	Annual Maintenance (ATA) - Motors	SNJ-80	1	

148	20-835	524 99	MOTOR	80-EM-8001B1	Annual Maintenance (ATA) - Motors	SNJ-80	1	
149	20-834	530 13	MOTOR	80-EM-8001A2	Annual Maintenance (ATA) - Motors	SNJ-80	1	
150	20-833	530 12	MOTOR	80-EM-8001A1	Annual Maintenance (ATA) - Motors	SNJ-80	1	
151	20-832	529 50	MOTOR	71-EM-7103	Annual Maintenance (ATA) - Motors	SNJ-71	1	
152	20-823	518 86	MOTOR	28-EM-2801B	Annual Maintenance (ATA) - Motors	SNJ-28	1	
153	20-822	518 85	MOTOR	28-EM-2801A	Annual Maintenance (ATA) - Motors	SNJ-28	1	
154	20-831	525 97	MOTOR	60-EM-6001B	Annual Maintenance (ATA) - Motors	SNj-60	1	
155	20-830	525 96	MOTOR	60-EM-6001A	Annual Maintenance (ATA) - Motors	SNj-60	1	
156	20-829	523 59	MOTOR	33-EM-3302	Annual Maintenance (ATA) - Motors	SNJ-30	1	
157	20-824	523 55	MOTOR	30-EM-3001	Annual Maintenance (ATA) - Motors	SNJ-30	1	
158	20-821	524 91	MOTOR	27-EM-2721B	Annual Maintenance (ATA) - Motors	SNj-33	1	
159	20-820	524 90	MOTOR	27-EM-2721A	Annual Maintenance (ATA) - Motors	SNj-33	1	
160	20-817	517 43	MOTOR	26-EM-2601	Annual Maintenance (ATA) - Motors	SNJ-26	1	
161	20-816	521 68	MOTOR	29-12-GM-1111	Annual Maintenance (ATA) - Motors	SNJ-29	1	
162	20-815	521 67	MOTOR	29-12-GM-1110	Annual Maintenance (ATA) - Motors	SNJ-29	1	
163	20-814	521 66	MOTOR	29-12-EM-1110C	Annual Maintenance (ATA) - Motors	SNJ-29	1	
164	20-813	521 65	MOTOR	29-12-EM-1110B	Annual Maintenance (ATA) - Motors	SNJ-29	1	
165	20-812	521 64	MOTOR	29-12-EM-1110A	Annual Maintenance (ATA) - Motors	SNJ-29	1	
166	20-811	520 64	MOTOR	29-11-GM-1111	Annual Maintenance (ATA) - Motors	SNJ-29	1	
167	20-810	520 63	MOTOR	29-11-GM-1110	Annual Maintenance (ATA) - Motors	SNJ-29	1	

168	20-809	520 62	MOTOR	29-11-EM-1110C	Annual Maintenance (ATA) - Motors	SNJ-29	1	
169	20-808	520 61	MOTOR	29-11-EM-1110B	Annual Maintenance (ATA) - Motors	SNJ-29	1	
170	20-807	520 60	MOTOR	29-11-EM-1110A	Annual Maintenance (ATA) - Motors	SNJ-29	1	
171	20-806	519 59	MOTOR	29-10-GM-1111	Annual Maintenance (ATA) - Motors	SNJ-29	1	
172	20-805	519 58	MOTOR	29-10-GM-1110	Annual Maintenance (ATA) - Motors	SNJ-29	1	
173	20-804	519 57	MOTOR	29-10-EM-1110C	Annual Maintenance (ATA) - Motors	SNJ-29	1	
174	20-803	519 56	MOTOR	29-10-EM-1110B	Annual Maintenance (ATA) - Motors	SNJ-29	1	
175	20-802	519 55	MOTOR	29-10-EM-1110A	Annual Maintenance (ATA) - Motors	SNJ-29	1	
176	20-801	515 48	MOTOR	20-03-GM-1111	Annual Maintenance (ATA) - Motors	SNJ-20	1	
177	20-800	515 47	MOTOR	20-03-GM-1110	Annual Maintenance (ATA) - Motors	SNJ-20	1	
178	20-799	515 46	MOTOR	20-03-EM-1110C	Annual Maintenance (ATA) - Motors	SNJ-20	1	
179	20-798	515 45	MOTOR	20-03-EM-1110B	Annual Maintenance (ATA) - Motors	SNJ-20	1	
180	20-797	515 44	MOTOR	20-03-EM-1110A	Annual Maintenance (ATA) - Motors	SNJ-20	1	
181	20-796	514 43	MOTOR	20-02-GM-1111	Annual Maintenance (ATA) - Motors	SNJ-20	1	
182	20-795	514 42	MOTOR	20-02-GM-1110	Annual Maintenance (ATA) - Motors	SNJ-20	1	
183	20-794	514 41	MOTOR	20-02-EM-1110C	Annual Maintenance (ATA) - Motors	SNJ-20	1	
184	20-793	514 40	MOTOR	20-02-EM-1110B	Annual Maintenance (ATA) - Motors	SNJ-20	1	
185	20-792	514 39	MOTOR	20-02-EM-1110A	Annual Maintenance (ATA) - Motors	SNJ-20	1	
186	20-791	513 38	MOTOR	20-01-GM-1111	Annual Maintenance (ATA) - Motors	SNJ-20	1	
187	20-790	513 35	MOTOR	20-01-GM-1110	Annual Maintenance (ATA) - Motors	SNJ-20	1	

188	20-789	513 37	MOTOR	20-01-EM-11SP2	Annual Maintenance (ATA) - Motors	SNJ-20	1	
189	20-788	513 36	MOTOR	20-01-EM-11SP1	Annual Maintenance (ATA) - Motors	SNJ-20	1	
190	20-787	513 34	MOTOR	20-01-EM-1110C	Annual Maintenance (ATA) - Motors	SNJ-20	1	
191	20-786	513 33	MOTOR	20-01-EM-1110B	Annual Maintenance (ATA) - Motors	SNJ-20	1	
192	20-785	513 32	MOTOR	20-01-EM-1110A	Annual Maintenance (ATA) - Motors	SNJ-20	1	
MOTORS FOR BEARING REPLACEMENT JOB								
193	20-868	526 00	MOTOR	60-GM-6031C	Annual Maintenance (ATA) - Motors	Snj-60	1	
194	20-867	525 99	MOTOR	60-GM-6031B	Annual Maintenance (ATA) - Motors	Snj-60	1	
195	20-866	525 98	MOTOR	60-GM-6031A	Annual Maintenance (ATA) - Motors	Snj-60	1	
196	20-859	523 22	MOTOR	30-GM-3041B	Annual Maintenance (ATA) - Motors	SNJ-30	1	
197	20-858	523 21	MOTOR	30-GM-3041A	Annual Maintenance (ATA) - Motors	SNJ-30	1	
198	20-819	518 24	MOTOR	27-EM-2701B	Annual Maintenance (ATA) - Motors	SNJ-27	1	
199	20-818	518 23	MOTOR	27-EM-2701A	Annual Maintenance (ATA) - Motors	SNJ-27	1	
200	20-856	518 88	MOTOR	28-GM-2801B	Annual Maintenance (ATA) - Motors	SNJ-28	1	
201	20-855	518 87	MOTOR	28-GM-2801A	Annual Maintenance (ATA) - Motors	SNJ-28	1	
202	20-891	524 97	MOTOR	KM-5711B	Annual Maintenance (ATA) - Motors	SNJ-57	1	
203	20-890	524 96	MOTOR	KM-5711A	Annual Maintenance (ATA) - Motors	SNJ-57	1	
204	20-828	523 39	MOTOR	30-EM-3002B	Annual Maintenance (ATA) - Motors	SNJ-30	1	
205	20-827	523 38	MOTOR	30-EM-3002A	Annual Maintenance (ATA) - Motors	SNJ-30	1	
206	20-826	523 07	MOTOR	30-EM-3001B	Annual Maintenance (ATA) - Motors	SNJ-30	1	

207	20-825	52306	MOTOR	30-EM-3001A	Annual Maintenance (ATA) - Motors	SNJ-30	1	
208	20-876	52935	MOTOR	71-GM-7101C	Annual Maintenance (ATA) - Motors	SNJ-71	1	
209	20-875	52934	MOTOR	71-GM-7101B	Annual Maintenance (ATA) - Motors	SNJ-71	1	
210	20-874	52933	MOTOR	71-GM-7101A	Annual Maintenance (ATA) - Motors	SNJ-71	1	
211	20-888	52493	MOTOR	27-KM-2721B	Annual Maintenance (ATA) - Motors	SNJ-27	1	
212	20-887	52492	MOTOR	27-KM-2721A	Annual Maintenance (ATA) - Motors	SNJ-27	1	
213	20-863	52428	MOTOR	51-GM-5111B	Annual Maintenance (ATA) - Motors	SNJ-51	1	
214	20-862	52427	MOTOR	51-GM-5111A	Annual Maintenance (ATA) - Motors	SNJ-51	1	

ATA-2020 WORK ORDERS OF INSTRUMENT SECTION

Sr. No	Work Order	Description	Asset	Asset Description	Location	Qty.	Quoted Rate
1	20-683	Annual Maintenance (ATA) - Pressure Safety Valve	51153	PRESSURE SAFETY VALVE	13-1301-PSV	1	
2	20-1069	Annual Maintenance (ATA) - Pressure Control Valve	51156	PRESSURE CONTROL VALVE	20-PCV-01	1	
3	20-702	Annual Maintenance (ATA) - Pressure Safety Valve	51159	PRESSURE SAFETY VALVE	20-PSV-0101	1	
4	20-703	Annual Maintenance (ATA) - Pressure Safety Valve	51160	PRESSURE SAFETY VALVE	20-PSV-0201	1	
5	20-704	Annual Maintenance (ATA) - Pressure Safety Valve	51161	PRESSURE SAFETY VALVE	20-PSV-0301	1	
6	20-705	Annual Maintenance (ATA) - Pressure Safety Valve	51162	PRESSURE SAFETY VALVE	20-PSV-0401	1	
7	20-706	Annual Maintenance (ATA) - Pressure Safety Valve	51163	PRESSURE SAFETY VALVE	20-PSV-0501	1	
8	20-707	Annual Maintenance (ATA) - Pressure Safety Valve	51164	PRESSURE SAFETY VALVE	20-PSV-0601	1	
9	20-708	Annual Maintenance (ATA) - Pressure Safety Valve	51165	PRESSURE SAFETY VALVE	20-PSV-0701	1	
10	20-709	Annual Maintenance (ATA) - Pressure Safety Valve	51166	PRESSURE SAFETY VALVE	20-PSV-0801	1	
11	20-710	Annual Maintenance (ATA) - Pressure Safety Valve	51167	PRESSURE SAFETY VALVE	20-PSV-0901	1	
12	20-711	Annual Maintenance (ATA) - Pressure Safety Valve	51168	PRESSURE SAFETY VALVE	20-PSV-1101	1	
13	20-712	Annual Maintenance (ATA) - Pressure Safety Valve	51169	PRESSURE SAFETY VALVE	20-PSV-1201	1	

14	20-713	Annual Maintenance (ATA) - Pressure Safety Valve	51170	PRESSURE SAFE TY VALVE	20-PSV- 1301	1	
15	20-714	Annual Maintenance (ATA) - Pressure Safety Valve	51171	PRESSURE SAFE TY VALVE	20-PSV- 1401	1	
16	20- 1686	Annual Maintenance (ATA) - Emergency Shutdown /ON OFF Valve	51198	ON-OFF VALVE	20- ESDV- 0101	1	
17	20- 1687	Annual Maintenance (ATA) - Emergency Shutdown /ON OFF Valve	51199	ON-OFF VALVE	20- ESDV- 0201	1	
18	20- 1688	Annual Maintenance (ATA) - Emergency Shutdown /ON OFF Valve	51200	ON-OFF VALVE	20- ESDV- 0301	1	
19	20- 1689	Annual Maintenance (ATA) - Emergency Shutdown /ON OFF Valve	51201	ON-OFF VALVE	20- ESDV- 0401	1	
20	20- 1690	Annual Maintenance (ATA) - Emergency Shutdown /ON OFF Valve	51202	ON-OFF VALVE	20- ESDV- 0501	1	
21	20- 1691	Annual Maintenance (ATA) - Emergency Shutdown /ON OFF Valve	51203	ON-OFF VALVE	20- ESDV- 0601	1	
22	20- 1692	Annual Maintenance (ATA) - Emergency Shutdown /ON OFF Valve	51204	ON-OFF VALVE	20- ESDV- 0701	1	
23	20- 1693	Annual Maintenance (ATA) - Emergency Shutdown /ON OFF Valve	51205	ON-OFF VALVE	20- ESDV- 0801	1	
24	20- 1694	Annual Maintenance (ATA) - Emergency Shutdown /ON OFF Valve	51206	ON-OFF VALVE	20- ESDV- 0901	1	
25	20- 1695	Annual Maintenance (ATA) - Emergency Shutdown /ON OFF Valve	51207	ON-OFF VALVE	20- ESDV- 1101	1	
26	20- 1696	Annual Maintenance (ATA) - Emergency Shutdown /ON OFF Valve	51208	ON-OFF VALVE	20- ESDV- 1201	1	
27	20- 1697	Annual Maintenance (ATA) - Emergency Shutdown /ON OFF Valve	51209	ON-OFF VALVE	20- ESDV- 1301	1	
28	20- 1698	Annual Maintenance (ATA) - Emergency Shutdown /ON OFF Valve	51210	ON-OFF VALVE	ESDV- 1401	1	
29	20- 1442	Annual Maintenance (ATA) - Pressure Transmitter	51212	Pressure Trans mitter	20- 1500- PT-01	1	

30	20-1467	Annual Maintenance (ATA) - Temperature Transmitter	51213	Temperature Transmitter	20-1500-TT-01	1	
31	20-1443	Annual Maintenance (ATA) - Pressure Transmitter	51215	Pressure Transmitter	20-1600-PT-01	1	
32	20-1468	Annual Maintenance (ATA) - Temperature Transmitter	51216	Temperature Transmitter	20-1600-TT-01	1	
33	20-1444	Annual Maintenance (ATA) - Pressure Transmitter	51218	Pressure Transmitter	20-1700-PT-01	1	
34	20-1469	Annual Maintenance (ATA) - Temperature Transmitter	51219	Temperature Transmitter	20-1700-TT-01	1	
35	20-1640	Annual Maintenance (ATA) - Emergency Shutdown /ON OFF Valve	51220	ON OFF Valve	20-2001-ESDV-01	1	
36	20-1641	Annual Maintenance (ATA) - Emergency Shutdown /ON OFF Valve	51221	ON OFF Valve	20-2001-ESDV-02	1	
37	20-1642	Annual Maintenance (ATA) - Emergency Shutdown /ON OFF Valve	51222	ON OFF Valve	20-2001-ESDV-03	1	
38	20-1643	Annual Maintenance (ATA) - Emergency Shutdown /ON OFF Valve	51223	ON OFF Valve	20-2001-ESDV-04	1	
39	20-1530	Annual Maintenance (ATA) - Level Switch	51225	Level Switch High High	20-2001-LSHH-01	1	
40	20-1531	Annual Maintenance (ATA) - Level Switch	51226	Level Switch Low Low	20-2001-LSLL-01	1	
41	20-617	Annual Maintenance (ATA) - Level Transmitter	51227	Level Transmitter	20-2001-LT-01	1	
42	20-1370	Annual Maintenance (ATA) - Level Control Valve	51228	Level Control Valve	20-2001-LV-01	1	
43	20-1371	Annual Maintenance (ATA) - Level Control Valve	51229	Level Control Valve	20-2001-LV-02	1	
44	20-1351	Annual Maintenance (ATA) - Flow Control Valve	51230	Flow Control Valve	20-2001-FV-01	1	
45	20-1475	Annual Maintenance (ATA) - Flow Transmitter	51231	Flow Transmitter	20-2001-FT-01	1	
46	20-1476	Annual Maintenance (ATA) - Flow Transmitter	51232	Flow Transmitter	20-2001-FT-02	1	
47	20-1477	Annual Maintenance (ATA) - Flow Transmitter	51233	Flow Transmitter	20-2001-FT-03	1	
48	20-1478	Annual Maintenance (ATA) - Flow Transmitter	51234	Flow Transmitter	20-2001-	1	

						FT-04	
49	20-1479	Annual Maintenance (ATA) - Flow Transmitter	51235	Flow Transmitter	20-2001-FT-05	1	
50	20-1445	Annual Maintenance (ATA) - Pressure Transmitter	51236	Pressure Transmitter	20-2001-PT-01	1	
51	20-1470	Annual Maintenance (ATA) - Temperature Transmitter	51237	Temperature Transmitter	20-2001-TT-01	1	
52	20-684	Annual Maintenance (ATA) - Pressure Safety Valve	51240	PRESSURE SAFETY VALVE	20-2001-PSV-01	1	
53	20-1644	Annual Maintenance (ATA) - Emergency Shutdown /ON OFF Valve	51241	ON OFF Valve	20-2002-ESDV-05	1	
54	20-1532	Annual Maintenance (ATA) - Level Switch	51243	Level Switch High High	20-2002-LSHH-01	1	
55	20-1533	Annual Maintenance (ATA) - Level Switch	51244	Level Switch High High	20-2002-LSHH-02	1	
56	20-1534	Annual Maintenance (ATA) - Level Switch	51245	Level Switch Low Low	20-2002-LSLL-01	1	
57	20-1535	Annual Maintenance (ATA) - Level Switch	51246	Level Switch Low Low	20-2002-LSLL-02	1	
58	20-618	Annual Maintenance (ATA) - Level Transmitter	51247	Level Transmitter	20-2002-LT-01	1	
59	20-619	Annual Maintenance (ATA) - Level Transmitter	51248	Level Transmitter	20-2002-LT-02	1	
60	20-1372	Annual Maintenance (ATA) - Level Control Valve	51249	Level Control Valve	20-2002-LV-01	1	
61	20-1373	Annual Maintenance (ATA) - Level Control Valve	51250	Level Control Valve	20-2002-LV-02	1	
62	20-1374	Annual Maintenance (ATA) - Level Control Valve	51251	Level Control Valve	20-2002-LV-03	1	
63	20-1446	Annual Maintenance (ATA) - Pressure Transmitter	51254	Pressure Transmitter	20-2002-PT-01	1	
64	20-1447	Annual Maintenance (ATA) - Pressure Transmitter	51255	Pressure Transmitter	20-2002-PT-02	1	
65	20-1480	Annual Maintenance (ATA) - Flow Transmitter	51256	Flow Transmitter	20-2002-FT-01	1	
66	20-1481	Annual Maintenance (ATA) - Flow Transmitter	51257	Flow Transmitter	20-2002-FT-02	1	
67	20-1482	Annual Maintenance (ATA) - Flow Transmitter	51258	Flow Transmitter	20-2002-FT-03	1	

68	20-1483	Annual Maintenance (ATA) - Flow Transmitter	51259	Flow Transmitter	20-2002-FT-04	1	
69	20-1471	Annual Maintenance (ATA) - Temperature Transmitter	51260	Temperature Transmitter	20-2002-TT-02	1	
70	20-685	Annual Maintenance (ATA) - Pressure Safety Valve	51263	PRESSURE SAFETY VALVE	20-2002-PSV-01	1	
71	20-1645	Annual Maintenance (ATA) - Emergency Shutdown /ON OFF Valve	51264	ON-OFF-Valve	20-2003-ESDV-01	1	
72	20-1646	Annual Maintenance (ATA) - Emergency Shutdown /ON OFF Valve	51265	ON-OFF-Valve	20-2003-ESDV-02	1	
73	20-1647	Annual Maintenance (ATA) - Emergency Shutdown /ON OFF Valve	51266	ON-OFF-Valve	20-2003-ESDV-03	1	
74	20-1648	Annual Maintenance (ATA) - Emergency Shutdown /ON OFF Valve	51267	ON-OFF-Valve	20-2003-ESDV-04	1	
75	20-1536	Annual Maintenance (ATA) - Level Switch	51269	Level Switch High High	20-2003-LSHH-01	1	
76	20-1537	Annual Maintenance (ATA) - Level Switch	51270	Level Switch High High	20-2003-LSHH-02	1	
77	20-1538	Annual Maintenance (ATA) - Level Switch	51271	Level Switch Low Low	20-2003-LSLL-01	1	
78	20-1539	Annual Maintenance (ATA) - Level Switch	51272	Level Switch Low Low	20-2003-LSLL-02	1	
79	20-620	Annual Maintenance (ATA) - Level Transmitter	51273	Level Transmitter	20-2003-LT-01	1	
80	20-621	Annual Maintenance (ATA) - Level Transmitter	51274	Level Transmitter	20-2003-LT-02	1	
81	20-1375	Annual Maintenance (ATA) - Level Control Valve	51275	Level Control Valve	20-2003-LV-01	1	
82	20-1376	Annual Maintenance (ATA) - Level Control Valve	51276	Level Control Valve	20-2003-LV-02	1	
83	20-1377	Annual Maintenance (ATA) - Level Control Valve	51277	Level Control Valve	20-2003-LV-03	1	
84	20-1448	Annual Maintenance (ATA) - Pressure Transmitter	51279	Pressure Transmitter	20-2003-PT-02	1	
85	20-1484	Annual Maintenance (ATA) - Flow Transmitter	51280	Flow Transmitter	20-2003-FT-01	1	
86	20-1485	Annual Maintenance (ATA) - Flow Transmitter	51281	Flow Transmitter	20-2003-	1	

					FT-02		
87	20-1486	Annual Maintenance (ATA) - Flow Transmitter	51282	Flow Transmitter	20-2003-FT-03	1	
88	20-1487	Annual Maintenance (ATA) - Flow Transmitter	51283	Flow Transmitter	20-2003-FT-04	1	
89	20-1472	Annual Maintenance (ATA) - Temperature Transmitter	51284	Temperature Transmitter	20-2003-TT-02	1	
90	20-686	Annual Maintenance (ATA) - Pressure Safety Valve	51287	PRESSURE SAFETY VALVE	20-2003-PSV-01	1	
91	20-622	Annual Maintenance (ATA) - Level Transmitter	51288	Level Transmitter	20-2004-LT-01	1	
92	20-623	Annual Maintenance (ATA) - Level Transmitter	51289	Level Transmitter	20-2004-LT-02	1	
93	20-1378	Annual Maintenance (ATA) - Level Control Valve	51290	Level Control Valve	20-2004-LV-01	1	
94	20-1449	Annual Maintenance (ATA) - Pressure Transmitter	51294	Pressure Transmitter	20-2004-PT-01	1	
95	20-1488	Annual Maintenance (ATA) - Flow Transmitter	51295	Flow Transmitter	20-2004-FT-01	1	
96	20-1489	Annual Maintenance (ATA) - Flow Transmitter	51296	Flow Transmitter	20-2004-FT-02	1	
97	20-1490	Annual Maintenance (ATA) - Flow Transmitter	51297	Flow Transmitter	20-2004-FT-03	1	
98	20-687	Annual Maintenance (ATA) - Pressure Safety Valve	51300	PRESSURE SAFETY VALVE	20-2004-PSV-01	1	
99	20-624	Annual Maintenance (ATA) - Level Transmitter	51302	Level Transmitter	20-2004A-LT-01	1	
100	20-1540	Annual Maintenance (ATA) - Level Switch	51303	Level Switch	20-2004A-LSLL-01	1	
101	20-688	Annual Maintenance (ATA) - Pressure Safety Valve	51307	PRESSURE SAFETY VALVE	20-2004A-PSV-01	1	
102	20-625	Annual Maintenance (ATA) - Level Transmitter	51309	Level Transmitter	20-2004B-LT-01	1	
103	20-1541	Annual Maintenance (ATA) - Level Switch	51310	Level Switch	20-2004B-LSLL-01	1	
104	20-689	Annual Maintenance (ATA) - Pressure Safety Valve	51314	PRESSURE SAFETY VALVE	20-2004B-PSV-01	1	
105	20-649	Annual Maintenance (ATA) - Pressure Safety Valve	51353	PRESSURE SAFETY VALVE	20-01-PSV-1111	1	

106	20-1394	Annual Maintenance (ATA) - Pressure Transmitter	51361	PRESSURE TRANSMITTER	20-01-PT-1101	1	
107	20-1395	Annual Maintenance (ATA) - Pressure Transmitter	51362	PRESSURE TRANSMITTER	20-01-PT-1102	1	
108	20-1396	Annual Maintenance (ATA) - Pressure Transmitter	51363	PRESSURE TRANSMITTER	20-01-PT-1103	1	
109	20-1502	Annual Maintenance (ATA) - Level Switch	51364	LEVEL SWITCH HIGH HIGH	20-01-LSHH-1101	1	
110	20-1364	Annual Maintenance (ATA) - Level Control Valve	51365	LEVEL CONTROL VALVE	20-01-LCV-1101	1	
111	20-1057	Annual Maintenance (ATA) - Pressure Control Valve	51366	PRESSURE CONTROL VALVE	20-01-PCV-1101	1	
112	20-650	Annual Maintenance (ATA) - Pressure Safety Valve	51367	PRESSURE SAFETY VALVE	20-01-PSV-1112	1	
113	20-1628	Annual Maintenance (ATA) - Emergency Shutdown /ON OFF Valve	51369	SHUT DOWN VALVE	20-01-SDV-1101	1	
114	20-1629	Annual Maintenance (ATA) - Emergency Shutdown /ON OFF Valve	51370	SHUT DOWN VALVE	20-01-SDV-1102	1	
115	20-1397	Annual Maintenance (ATA) - Pressure Transmitter	51377	PRESSURE TRANSMITTER	20-01-PT-1201	1	
116	20-1398	Annual Maintenance (ATA) - Pressure Transmitter	51380	PRESSURE TRANSMITTER	20-01-PT-1204	1	
117	20-1399	Annual Maintenance (ATA) - Pressure Transmitter	51381	PRESSURE TRANSMITTER	20-01-PT-1205	1	
118	20-1500	Annual Maintenance (ATA) - Level Switch	51388	LEVEL SWITCH	20-01-LS-1201	1	
119	20-1501	Annual Maintenance (ATA) - Level Switch	51389	LEVEL SWITCH	20-01-LS-1202	1	
120	20-1093	Annual Maintenance (ATA) - Temperature Control Valve	51391	TEMP CONTROL VALVE	20-01-TCV-1201	1	
121	20-1094	Annual Maintenance (ATA) - Temperature Control Valve	51392	TEMP CONTROL VALVE	20-01-TCV-1202	1	
122	20-1400	Annual Maintenance (ATA) - Pressure Transmitter	51393	PRESSURE TRANSMITTER	20-01-PT-1206	1	
123	20-651	Annual Maintenance (ATA) - Pressure Safety Valve	51394	PRESSURE SAFETY VALVE	20-01-PSV-1201	1	
124	20-652	Annual Maintenance (ATA) - Pressure Safety Valve	51395	PRESSURE SAFETY VALVE	20-01-PSV-1202	1	
125	20-653	Annual Maintenance (ATA) - Pressure Safety Valve	51396	PRESSURE SAFETY VALVE	20-01-PSV-1203	1	
126	20-1095	Annual Maintenance (ATA) - Temperature Control Valve	51400	TEMP CONTROL VALVE	20-01-TCV-1301	1	

127	20-1503	Annual Maintenance (ATA) - Level Switch	51401	LEVEL SWITCH LOW LOW	20-01-LSLL-1301	1	
128	20-1504	Annual Maintenance (ATA) - Level Switch	51402	LEVEL SWITCH LOW LOW	20-01-LSLL-1302	1	
129	20-1096	Annual Maintenance (ATA) - Temperature Control Valve	51403	TEMP CONTROL VALVE	20-01-TCV-1302	1	
130	20-1401	Annual Maintenance (ATA) - Pressure Transmitter	51407	PRESSURE TRANSMITTER	20-01-PT-1305	1	
131	20-1058	Annual Maintenance (ATA) - Pressure Control Valve	51430	PRESSURE CONTROL VALVE	20-01-PCV-1502	1	
132	20-654	Annual Maintenance (ATA) - Pressure Safety Valve	51432	PRESSURE SAFETY VALVE	20-01-PSV-1501	1	
133	20-655	Annual Maintenance (ATA) - Pressure Safety Valve	51458	PRESSURE SAFETY VALVE	20-02-PSV-1111	1	
134	20-1402	Annual Maintenance (ATA) - Pressure Transmitter	51466	PRESSURE TRANSMITTER	20-02-PT-1101	1	
135	20-1403	Annual Maintenance (ATA) - Pressure Transmitter	51467	PRESSURE TRANSMITTER	20-02-PT-1102	1	
136	20-1404	Annual Maintenance (ATA) - Pressure Transmitter	51468	PRESSURE TRANSMITTER	20-02-PT-1103	1	
137	20-1507	Annual Maintenance (ATA) - Level Switch	51469	LEVEL SWITCH HIGH HIGH	20-02-LSHH-1101	1	
138	20-1365	Annual Maintenance (ATA) - Level Control Valve	51470	LEVEL CONTROL VALVE	20-02-LCV-1101	1	
139	20-1059	Annual Maintenance (ATA) - Pressure Control Valve	51471	PRESSURE CONTROL VALVE	20-02-PCV-1101	1	
140	20-656	Annual Maintenance (ATA) - Pressure Safety Valve	51472	PRESSURE SAFETY VALVE	20-02-PSV-1112	1	
141	20-1630	Annual Maintenance (ATA) - Emergency Shutdown /ON OFF Valve	51474	SHUT DOWN VALVE	20-02-SDV-1101	1	
142	20-1631	Annual Maintenance (ATA) - Emergency Shutdown /ON OFF Valve	51475	SHUT DOWN VALVE	20-02-SDV-1102	1	
143	20-1405	Annual Maintenance (ATA) - Pressure Transmitter	51482	PRESSURE TRANSMITTER	20-02-PT-1201	1	
144	20-1406	Annual Maintenance (ATA) - Pressure Transmitter	51485	PRESSURE TRANSMITTER	20-02-PT-1204	1	
145	20-1407	Annual Maintenance (ATA) - Pressure Transmitter	51486	PRESSURE TRANSMITTER	20-02-PT-1205	1	
146	20-1505	Annual Maintenance (ATA) - Level Switch	51493	LEVEL SWITCH	20-02-LS-1201	1	
147	20-1506	Annual Maintenance (ATA) - Level Switch	51494	LEVEL SWITCH	20-02-LS-1202	1	
148	20-1097	Annual Maintenance (ATA) -	51496	TEMP CONTROL VALVE	20-02-TCV-	1	

		Temperature Control Valve			1201		
149	20-1098	Annual Maintenance (ATA) - Temperature Control Valve	51497	TEMP CONTROL VALVE	20-02-TCV-1202	1	
150	20-1408	Annual Maintenance (ATA) - Pressure Transmitter	51498	PRESSURE TRANSMITTER	20-02-PT-1206	1	
151	20-657	Annual Maintenance (ATA) - Pressure Safety Valve	51499	PRESSURE SAFETY VALVE	20-02-PSV-1201	1	
152	20-658	Annual Maintenance (ATA) - Pressure Safety Valve	51500	PRESSURE SAFETY VALVE	20-02-PSV-1202	1	
153	20-659	Annual Maintenance (ATA) - Pressure Safety Valve	51501	PRESSURE SAFETY VALVE	20-02-PSV-1203	1	
154	20-1099	Annual Maintenance (ATA) - Temperature Control Valve	51505	TEMP CONTROL VALVE	20-02-TCV-1301	1	
155	20-1508	Annual Maintenance (ATA) - Level Switch	51506	LEVEL SWITCH LOW LOW	20-02-LSLL-1301	1	
156	20-1509	Annual Maintenance (ATA) - Level Switch	51507	LEVEL SWITCH LOW LOW	20-02-LSLL-1302	1	
157	20-1100	Annual Maintenance (ATA) - Temperature Control Valve	51508	TEMP CONTROL VALVE	20-02-TCV-1302	1	
158	20-1409	Annual Maintenance (ATA) - Pressure Transmitter	51512	PRESSURE TRANSMITTER	20-02-PT-1305	1	
159	20-1060	Annual Maintenance (ATA) - Pressure Control Valve	51535	PRESSURE CONTROL VALVE	20-02-PCV-1502	1	
160	20-660	Annual Maintenance (ATA) - Pressure Safety Valve	51537	PRESSURE SAFETY VALVE	20-02-PSV-1501	1	
161	20-661	Annual Maintenance (ATA) - Pressure Safety Valve	51563	PRESSURE SAFETY VALVE	20-03-PSV-1111	1	
162	20-1410	Annual Maintenance (ATA) - Pressure Transmitter	51571	PRESSURE TRANSMITTER	20-03-PT-1101	1	
163	20-1411	Annual Maintenance (ATA) - Pressure Transmitter	51572	PRESSURE TRANSMITTER	20-03-PT-1102	1	
164	20-1412	Annual Maintenance (ATA) - Pressure Transmitter	51573	PRESSURE TRANSMITTER	20-03-PT-1103	1	
165	20-1512	Annual Maintenance (ATA) - Level Switch	51574	LEVEL SWITCH HIGH HIGH	20-03-LSHH-1101	1	
166	20-1366	Annual Maintenance (ATA) - Level Control Valve	51575	LEVEL CONTROL VALVE	20-03-LCV-1101	1	
167	20-1061	Annual Maintenance (ATA) - Pressure Control Valve	51576	PRESSURE CONTROL VALVE	20-03-PCV-1101	1	
168	20-662	Annual Maintenance (ATA) - Pressure Safety Valve	51577	PRESSURE SAFETY VALVE	20-03-PSV-	1	

					1112		
169	20-1632	Annual Maintenance (ATA) - Emergency Shutdown /ON OFF Valve	51579	SHUT DOWN VA LVE	20-03- SDV- 1101	1	
170	20-1633	Annual Maintenance (ATA) - Emergency Shutdown /ON OFF Valve	51580	SHUT DOWN VA LVE	20-03- SDV- 1102	1	
171	20-1413	Annual Maintenance (ATA) - Pressure Transmitter	51587	PRESSURE TRAN SMITTER	20-03- PT-1201	1	
172	20-1414	Annual Maintenance (ATA) - Pressure Transmitter	51590	PRESSURE TRAN SMITTER	20-03- PT-1204	1	
173	20-1415	Annual Maintenance (ATA) - Pressure Transmitter	51591	PRESSURE TRAN SMITTER	20-03- PT-1205	1	
174	20-1510	Annual Maintenance (ATA) - Level Switch	51598	LEVEL SWITCH	20-03- LS-1201	1	
175	20-1511	Annual Maintenance (ATA) - Level Switch	51599	LEVEL SWITCH	20-03- LS-1202	1	
176	20-1101	Annual Maintenance (ATA) - Temperature Control Valv e	51601	TEMP CONTROL VALVE	20-03- TCV- 1201	1	
177	20-1102	Annual Maintenance (ATA) - Temperature Control Valv e	51602	TEMP CONTROL VALVE	20-03- TCV- 1202	1	
178	20-1416	Annual Maintenance (ATA) - Pressure Transmitter	51603	PRESSURE TRAN SMITTER	20-03- PT-1206	1	
179	20-663	Annual Maintenance (ATA) - Pressure Safety Valve	51604	PRESSURE SAFE TY VALVE	20-03- PSV- 1201	1	
180	20-664	Annual Maintenance (ATA) - Pressure Safety Valve	51605	PRESSURE SAFE TY VALVE	20-03- PSV- 1202	1	
181	20-665	Annual Maintenance (ATA) - Pressure Safety Valve	51606	PRESSURE SAFE TY VALVE	20-03- PSV- 1203	1	
182	20-1103	Annual Maintenance (ATA) - Temperature Control Valv e	51610	TEMP CONTROL VALVE	20-03- TCV- 1301	1	
183	20-1513	Annual Maintenance (ATA) - Level Switch	51611	LEVEL SWITCH L OW LOW	20-03- LSLL- 1301	1	
184	20-1514	Annual Maintenance (ATA) - Level Switch	51612	LEVEL SWITCH L OW LOW	20-03- LSLL- 1302	1	
185	20-1104	Annual Maintenance (ATA) - Temperature Control Valv e	51613	TEMP CONTROL VALVE	20-03- TCV- 1302	1	
186	20-1417	Annual Maintenance (ATA) - Pressure Transmitter	51617	PRESSURE TRAN SMITTER	20-03- PT-1305	1	
187	20-1062	Annual Maintenance (ATA) - Pressure Control Valve	51640	PRESSURE CON TROL VALVE	20-03- PCV- 1502	1	

188	20-666	Annual Maintenance (ATA) - Pressure Safety Valve	51642	PRESSURE SAFETY VALVE	20-03-PSV-1501	1	
189	20-626	Annual Maintenance (ATA) - Level Transmitter	51644	Level Transmitter	20-2005-LT-01	1	
190	20-1542	Annual Maintenance (ATA) - Level Switch	51645	Level Switch	20-2005-LSLL-01	1	
191	20-1606	Annual Maintenance (ATA) - Pressure Switch	51650	PRESSURE SWITCH HIGH HIGH	25-PSHH-2500-01	1	
192	20-1607	Annual Maintenance (ATA) - Pressure Switch	51651	PRESSURE SWITCH HIGH HIGH	25-PSHH-2500-02	1	
193	20-1608	Annual Maintenance (ATA) - Pressure Switch	51652	PRESSURE SWITCH HIGH HIGH	25-PSHH-2500-03	1	
194	20-716	Annual Maintenance (ATA) - Pressure Safety Valve	51653	PRESSURE SAFETY VALVE	25-PSV-2502	1	
195	20-629	Annual Maintenance (ATA) - Level Transmitter	51654	Level Transmitter	25-LT-2503	1	
196	20-1580	Annual Maintenance (ATA) - Level Switch	51655	LEVEL SWITCH LOW LOW	25-LSLL-2505	1	
197	20-1560	Annual Maintenance (ATA) - Level Switch	51656	LEVEL SWITCH HIGH HIGH	25-LSHH-2506	1	
198	20-1581	Annual Maintenance (ATA) - Level Switch	51657	LEVEL SWITCH LOW LOW	25-LSLL-2511	1	
199	20-1451	Annual Maintenance (ATA) - Pressure Transmitter	51659	PRESSURE TRANSMITTER	25-PT-2504	1	
200	20-1699	Annual Maintenance (ATA) - Emergency Shutdown /ON OFF Valve	51660	SHUT DOWN VALVE	25-SDV-2501	1	
201	20-1379	Annual Maintenance (ATA) - Level Control Valve	51662	LEVEL CONTROL VALVE	25-LV-2503	1	
202	20-630	Annual Maintenance (ATA) - Level Transmitter	51663	Level Transmitter	25-LT-2508	1	
203	20-1380	Annual Maintenance (ATA) - Level Control Valve	51664	LEVEL CONTROL VALVE	25-LV-2508	1	
204	20-1700	Annual Maintenance (ATA) - Emergency Shutdown /ON OFF Valve	51665	SHUT DOWN VALVE	25-SDV-2502	1	
205	20-1452	Annual Maintenance (ATA) - Pressure Transmitter	51667	PRESSURE TRANSMITTER	25-PT-2505	1	
206	20-1072	Annual Maintenance (ATA) - Pressure Control Valve	51668	PRESSURE CONTROL VALVE	25-PV-2505	1	
207	20-715	Annual Maintenance (ATA) - Pressure Safety Valve	51674	PRESSURE SAFETY VALVE	25-PSV-2501	1	
208	20-1610	Annual Maintenance (ATA) - Pressure Switch	51679	PRESSURE SWITCH HIGH HIGH	26-PSHH-2622	1	
209	20-1706	Annual Maintenance (ATA) - Emergency Shutdown /ON OFF Valve	51684	SHUT DOWN VALVE	26-SDV-2742	1	

210	20-1493	Annual Maintenance (ATA) - Flow Transmitter	51692	FLOW TRANSMITTER	26-FT-2614	1	
211	20-1354	Annual Maintenance (ATA) - Flow Control Valve	51693	FLOW CONTROL VALVE	26-FV-2614	1	
212	20-1492	Annual Maintenance (ATA) - Flow Transmitter	51694	FLOW TRANSMITTER	26-FT-2611	1	
213	20-1353	Annual Maintenance (ATA) - Flow Control Valve	51695	FLOW CONTROL VALVE	26-FV-2611	1	
214	20-1600	Annual Maintenance (ATA) - Pressure Switch	51702	PRESSURE SWITCH HIGH HIGH	26-PSH-2615	1	
215	20-632	Annual Maintenance (ATA) - Level Transmitter	51705	LEVEL TRANSMITTER	26-LT-2611	1	
216	20-1382	Annual Maintenance (ATA) - Level Control Valve	51706	LEVEL CONTROL VALVE	26-LV-2611	1	
217	20-1701	Annual Maintenance (ATA) - Emergency Shutdown /ON OFF Valve	51707	SHUT DOWN VALVE	26-SDV-2611	1	
218	20-1582	Annual Maintenance (ATA) - Level Switch	51709	LEVEL SWITCH LOW LOW	26-LSLL-2613	1	
219	20-720	Annual Maintenance (ATA) - Pressure Safety Valve	51714	PRESSURE SAFETY VALVE	26-PSV-2611	1	
220	20-1609	Annual Maintenance (ATA) - Pressure Switch	51718	PRESSURE SWITCH HIGH HIGH	26-PSHH-2617	1	
221	20-1453	Annual Maintenance (ATA) - Pressure Transmitter	51723	PRESSURE TRANSMITTER	26-PT-2633	1	
222	20-1074	Annual Maintenance (ATA) - Pressure Control Valve	51724	PRESSURE CONTROL VALVE	26-PV-2633A	1	
223	20-721	Annual Maintenance (ATA) - Pressure Safety Valve	51727	PRESSURE SAFETY VALVE	26-PSV-2631	1	
224	20-1075	Annual Maintenance (ATA) - Pressure Control Valve	51728	PRESSURE CONTROL VALVE	26-PV-2633B	1	
225	20-1583	Annual Maintenance (ATA) - Level Switch	51730	LEVEL SWITCH LOW LOW	26-LSLL-2634	1	
226	20-1562	Annual Maintenance (ATA) - Level Switch	51731	LEVEL SWITCH HIGH HIGH	26-LSHH-2634	1	
227	20-1702	Annual Maintenance (ATA) - Emergency Shutdown /ON OFF Valve	51732	SHUT DOWN VALVE	26-SDV-2631	1	
228	20-1073	Annual Maintenance (ATA) - Pressure Control Valve	51733	PRESSURE CONTROL VALVE	26-PV-2631	1	
229	20-633	Annual Maintenance (ATA) - Level Transmitter	51734	LEVEL TRANSMITTER	26-LT-2631	1	
230	20-1383	Annual Maintenance (ATA) - Level Control Valve	51735	LEVEL CONTROL VALVE	26-LV-2631	1	
231	20-722	Annual Maintenance (ATA) - Pressure Safety Valve	51736	PRESSURE SAFETY VALVE	26-PSV-2632	1	
232	20-723	Annual Maintenance (ATA) - Pressure Safety Valve	51737	PRESSURE SAFETY VALVE	26-PSV-2633	1	
233	20-717	Annual Maintenance (ATA) - Pressure Safety Valve	51748	PRESSURE SAFETY VALVE	26-PSV-2601	1	
234	20-1491	Annual Maintenance (ATA) - Flow Transmitter	51751	FLOW TRANSMITTER	26-FT-2601	1	

235	20-1352	Annual Maintenance (ATA) - Flow Control Valve	51752	FLOW CONTROL VALVE	26-FV-2601	1	
236	20-718	Annual Maintenance (ATA) - Pressure Safety Valve	51756	PRESSURE SAFETY VALVE	26-PSV-2602	1	
237	20-631	Annual Maintenance (ATA) - Level Transmitter	51759	LEVEL TRANSMITTER	26-LT-2601	1	
238	20-1381	Annual Maintenance (ATA) - Level Control Valve	51761	LEVEL CONTROL VALVE	26-LV-2601	1	
239	20-719	Annual Maintenance (ATA) - Pressure Safety Valve	51763	PRESSURE SAFETY VALVE	26-PSV-2603	1	
240	20-725	Annual Maintenance (ATA) - Pressure Safety Valve	51768	PRESSURE SAFETY VALVE	27-PSV-2702	1	
241	20-726	Annual Maintenance (ATA) - Pressure Safety Valve	51795	PRESSURE SAFETY VALVE	27-PSV-2703	1	
242	20-1703	Annual Maintenance (ATA) - Emergency Shutdown /ON OFF Valve	51797	SHUT DOWN VALVE	27-SDV-2710	1	
243	20-1385	Annual Maintenance (ATA) - Level Control Valve	51799	LEVEL CONTROL VALVE	27-LV-2703	1	
244	20-635	Annual Maintenance (ATA) - Level Transmitter	51800	LEVEL TRANSMITTER	27-LT-2703	1	
245	20-1384	Annual Maintenance (ATA) - Level Control Valve	51801	LEVEL CONTROL VALVE	27-LV-2701	1	
246	20-634	Annual Maintenance (ATA) - Level Transmitter	51802	LEVEL TRANSMITTER	27-LT-2701	1	
247	20-1585	Annual Maintenance (ATA) - Level Switch	51804	LEVEL SWITCH LOW LOW	27-LSLL-2706	1	
248	20-1584	Annual Maintenance (ATA) - Level Switch	51806	LEVEL SWITCH LOW LOW	27-LSLL-2705	1	
249	20-724	Annual Maintenance (ATA) - Pressure Safety Valve	51807	PRESSURE SAFETY VALVE	27-PSV-2701	1	
250	20-1586	Annual Maintenance (ATA) - Level Switch	51808	LEVEL SWITCH LOW LOW	27-LSLL-2713	1	
251	20-1564	Annual Maintenance (ATA) - Level Switch	51809	LEVEL SWITCH HI HI	27-LSHH-2714	1	
252	20-636	Annual Maintenance (ATA) - Level Transmitter	51810	LEVEL TRANSMITTER	27-LT-2711	1	
253	20-1386	Annual Maintenance (ATA) - Level Control Valve	51811	LEVEL CONTROL VALVE	27-LV-2711	1	
254	20-1704	Annual Maintenance (ATA) - Emergency Shutdown /ON OFF Valve	51812	SHUT DOWN VALVE	27-SDV-2713	1	
255	20-1454	Annual Maintenance (ATA) - Pressure Transmitter	51815	PRESSURE TRANSMITTER	27-PT-2719	1	
256	20-1494	Annual Maintenance (ATA) - Flow Transmitter	51816	FLOW TRANSMITTER	27-FT-2712	1	
257	20-727	Annual Maintenance (ATA) - Pressure Safety Valve	51817	PRESSURE SAFETY VALVE	27-PSV-2711	1	
258	20-730	Annual Maintenance (ATA) - Pressure Safety Valve	51828	PRESSURE SAFETY VALVE	27-PSV-2741	1	
259	20-1705	Annual Maintenance (ATA) - Emergency Shutdown /ON OFF Valve	51832	SHUT DOWN VALVE	27-SDV-2741	1	

260	20-1076	Annual Maintenance (ATA) - Pressure Control Valve	51834	PRESSURE CONTROL VALVE	27-PV-2745	1	
261	20-1455	Annual Maintenance (ATA) - Pressure Transmitter	51835	PRESSURE TRANSMITTER	27-PT-2745	1	
262	20-1611	Annual Maintenance (ATA) - Pressure Switch	51842	PRESSURE SWITCH HIGH HIGH	27-PSHH-2711	1	
263	20-1601	Annual Maintenance (ATA) - Pressure Switch	51854	PRESSURE SWITCH HIGH	27-PSH-2728	1	
264	20-1612	Annual Maintenance (ATA) - Pressure Switch	51856	PRESSURE SWITCH HIGH HIGH	27-PSHH-2729	1	
265	20-728	Annual Maintenance (ATA) - Pressure Safety Valve	51859	PRESSURE SAFETY VALVE	27-PSV-2712	1	
266	20-1594	Annual Maintenance (ATA) - Pressure Switch	51863	PRESSURE SWITCH	27-PS-2727	1	
267	20-1617	Annual Maintenance (ATA) - Pressure Switch	51864	PRESSURE SWITCH LOW	27-PSL-2726	1	
268	20-1623	Annual Maintenance (ATA) - Pressure Switch	51865	PRESSURE SWITCH LOW LOW	27-PSLL-2725	1	
269	20-1602	Annual Maintenance (ATA) - Pressure Switch	51868	PRESSURE SWITCH HIGH	27-PSH-2735	1	
270	20-1613	Annual Maintenance (ATA) - Pressure Switch	51870	PRESSURE SWITCH HIGH HIGH	27-PSHH-2736	1	
271	20-729	Annual Maintenance (ATA) - Pressure Safety Valve	51875	PRESSURE SAFETY VALVE	27-PSV-2713	1	
272	20-1595	Annual Maintenance (ATA) - Pressure Switch	51877	PRESSURE SWITCH	27-PS-2734	1	
273	20-1618	Annual Maintenance (ATA) - Pressure Switch	51878	PRESSURE SWITCH LOW	27-PSL-2733	1	
274	20-1624	Annual Maintenance (ATA) - Pressure Switch	51879	PRESSURE SWITCH LOW LOW	27-PSLL-2732	1	
275	20-731	Annual Maintenance (ATA) - Pressure Safety Valve	51904	PRESSURE SAFETY VALVE	28-PSV-2851	1	
276	20-1592	Annual Maintenance (ATA) - Pressure Switch	51909	PRESSURE SWITCH LOW LOW	28-PDSLL-2856	1	
277	20-1593	Annual Maintenance (ATA) - Pressure Switch	51911	PRESSURE SWITCH LOW LOW	28-PDSLL-2860	1	
278	20-1574	Annual Maintenance (ATA) - Level Switch	51928	LEVEL SWITCH LOW LOW	28-LSL-2851	1	
279	20-648	Annual Maintenance (ATA) - Pressure Safety Valve	51930	PRESSURE SAFETY VALVE	29-01-PSV-01	1	
280	20-1392	Annual Maintenance (ATA) - Pressure Transmitter	51931	PRESSURE TRANSMITTER	29-01-PT-02	1	
281	20-1649	Annual Maintenance (ATA) - Emergency Shutdown /ON OFF Valve	51933	EMERGENCY SHUTDOWN VALVE	29-2901-ESDV-04	1	
282	20-1055	Annual Maintenance (ATA) - Pressure Control Valve	51935	PRESSURE CONTROL VALVE	29-01-PCV-02	1	
283	20-1391	Annual Maintenance (ATA) - Pressure Transmitter	51938	PRESSURE TRANSMITTER	29-01-PT-01	1	
284	20-1054	Annual Maintenance (ATA) - Pressure Control Valve	51939	PRESSURE CONTROL VALVE	29-01-PCV-01	1	

285	20-1056	Annual Maintenance (ATA) - Pressure Control Valve	51940	PRESSURE CONTROL VALVE	29-01-PCV-03	1	
286	20-1393	Annual Maintenance (ATA) - Pressure Transmitter	51944	PRESSURE TRANSMITTER	29-01-PT-03	1	
287	20-1456	Annual Maintenance (ATA) - Pressure Transmitter	51945	PRESSURE TRANSMITTER	29-PT-2905	1	
288	20-1070	Annual Maintenance (ATA) - Pressure Control Valve	51946	PRESSURE CONTROL VALVE	29-PCV-2905	1	
289	20-1627	Annual Maintenance (ATA) - Emergency Shutdown /ON OFF Valve	51949	SHUT DOWN VALVE	29-01-SDV-04	1	
290	20-1418	Annual Maintenance (ATA) - Pressure Transmitter	51982	PRESSURE TRANSMITTER	29-10-PT-1101	1	
291	20-1419	Annual Maintenance (ATA) - Pressure Transmitter	51983	PRESSURE TRANSMITTER	29-10-PT-1102	1	
292	20-1420	Annual Maintenance (ATA) - Pressure Transmitter	51984	PRESSURE TRANSMITTER	29-10-PT-1103	1	
293	20-1517	Annual Maintenance (ATA) - Level Switch	51985	LEVEL SWITCH HIGH HIGH	29-10-LSHH-1101	1	
294	20-1367	Annual Maintenance (ATA) - Level Control Valve	51986	LEVEL CONTROL VALVE	29-10-LCV-1101	1	
295	20-1063	Annual Maintenance (ATA) - Pressure Control Valve	51987	PRESSURE CONTROL VALVE	29-10-PCV-1101	1	
296	20-668	Annual Maintenance (ATA) - Pressure Safety Valve	51988	PRESSURE SAFETY VALVE	29-10-PSV-1112	1	
297	20-1634	Annual Maintenance (ATA) - Emergency Shutdown /ON OFF Valve	51990	SHUT DOWN VALVE	29-10-SDV-1101	1	
298	20-1635	Annual Maintenance (ATA) - Emergency Shutdown /ON OFF Valve	51991	SHUT DOWN VALVE	29-10-SDV-1102	1	
299	20-1421	Annual Maintenance (ATA) - Pressure Transmitter	51998	PRESSURE TRANSMITTER	29-10-PT-1201	1	
300	20-1422	Annual Maintenance (ATA) - Pressure Transmitter	52001	PRESSURE TRANSMITTER	29-10-PT-1204	1	
301	20-1423	Annual Maintenance (ATA) - Pressure Transmitter	52002	PRESSURE TRANSMITTER	29-10-PT-1205	1	
302	20-1515	Annual Maintenance (ATA) - Level Switch	52009	LEVEL SWITCH	29-10-LS-1201	1	
303	20-1516	Annual Maintenance (ATA) - Level Switch	52010	LEVEL SWITCH	29-10-LS-1202	1	
304	20-1105	Annual Maintenance (ATA) - Temperature Control Valve	52012	TEMP CONTROL VALVE	29-10-TCV-1201	1	
305	20-1106	Annual Maintenance (ATA) - Temperature Control Valve	52013	TEMP CONTROL VALVE	29-10-TCV-1202	1	
306	20-1424	Annual Maintenance (ATA) - Pressure Transmitter	52014	PRESSURE TRANSMITTER	29-10-PT-1206	1	

307	20-669	Annual Maintenance (ATA) - Pressure Safety Valve	52015	PRESSURE SAFETY VALVE	29-10-PSV-1201	1	
308	20-670	Annual Maintenance (ATA) - Pressure Safety Valve	52016	PRESSURE SAFETY VALVE	29-10-PSV-1202	1	
309	20-671	Annual Maintenance (ATA) - Pressure Safety Valve	52017	PRESSURE SAFETY VALVE	29-10-PSV-1203	1	
310	20-1107	Annual Maintenance (ATA) - Temperature Control Valve	52021	TEMP CONTROL VALVE	29-10-TCV-1301	1	
311	20-1518	Annual Maintenance (ATA) - Level Switch	52022	LEVEL SWITCH LOW LOW	29-10-LSLL-1301	1	
312	20-1519	Annual Maintenance (ATA) - Level Switch	52023	LEVEL SWITCH LOW LOW	29-10-LSLL-1302	1	
313	20-1108	Annual Maintenance (ATA) - Temperature Control Valve	52024	TEMP CONTROL VALVE	29-10-TCV-1302	1	
314	20-1425	Annual Maintenance (ATA) - Pressure Transmitter	52028	PRESSURE TRANSMITTER	29-10-PT-1305	1	
315	20-1064	Annual Maintenance (ATA) - Pressure Control Valve	52051	PRESSURE CONTROL VALVE	29-10-PCV-1502	1	
316	20-672	Annual Maintenance (ATA) - Pressure Safety Valve	52053	PRESSURE SAFETY VALVE	29-10-PSV-1501	1	
317	20-1426	Annual Maintenance (ATA) - Pressure Transmitter	52086	PRESSURE TRANSMITTER	29-11-PT-1101	1	
318	20-1427	Annual Maintenance (ATA) - Pressure Transmitter	52087	PRESSURE TRANSMITTER	29-11-PT-1102	1	
319	20-1428	Annual Maintenance (ATA) - Pressure Transmitter	52088	PRESSURE TRANSMITTER	29-11-PT-1103	1	
320	20-1522	Annual Maintenance (ATA) - Level Switch	52089	LEVEL SWITCH HIGH HIGH	29-11-LSHH-1101	1	
321	20-1368	Annual Maintenance (ATA) - Level Control Valve	52090	LEVEL CONTROL VALVE	29-11-LCV-1101	1	
322	20-1065	Annual Maintenance (ATA) - Pressure Control Valve	52091	PRESSURE CONTROL VALVE	29-11-PCV-1101	1	
323	20-673	Annual Maintenance (ATA) - Pressure Safety Valve	52092	PRESSURE SAFETY VALVE	29-11-PSV-1112	1	
324	20-1636	Annual Maintenance (ATA) - Emergency Shutdown /ON OFF Valve	52094	SHUT DOWN VALVE	29-11-SDV-1101	1	
325	20-1637	Annual Maintenance (ATA) - Emergency Shutdown /ON OFF Valve	52095	SHUT DOWN VALVE	29-11-SDV-1102	1	
326	20-1429	Annual Maintenance (ATA) - Pressure Transmitter	52102	PRESSURE TRANSMITTER	29-11-PT-1201	1	

327	20-1430	Annual Maintenance (ATA) - Pressure Transmitter	52105	PRESSURE TRANSMITTER	29-11-PT-1204	1	
328	20-1431	Annual Maintenance (ATA) - Pressure Transmitter	52106	PRESSURE TRANSMITTER	29-11-PT-1205	1	
329	20-1520	Annual Maintenance (ATA) - Level Switch	52113	LEVEL SWITCH	29-11-LS-1201	1	
330	20-1521	Annual Maintenance (ATA) - Level Switch	52114	LEVEL SWITCH	29-11-LS-1202	1	
331	20-1109	Annual Maintenance (ATA) - Temperature Control Valve	52116	TEMP CONTROL VALVE	29-11-TCV-1201	1	
332	20-1110	Annual Maintenance (ATA) - Temperature Control Valve	52117	TEMP CONTROL VALVE	29-11-TCV-1202	1	
333	20-1432	Annual Maintenance (ATA) - Pressure Transmitter	52118	PRESSURE TRANSMITTER	29-11-PT-1206	1	
334	20-674	Annual Maintenance (ATA) - Pressure Safety Valve	52119	PRESSURE SAFETY VALVE	29-11-PSV-1201	1	
335	20-675	Annual Maintenance (ATA) - Pressure Safety Valve	52120	PRESSURE SAFETY VALVE	29-11-PSV-1202	1	
336	20-676	Annual Maintenance (ATA) - Pressure Safety Valve	52121	PRESSURE SAFETY VALVE	29-11-PSV-1203	1	
337	20-1111	Annual Maintenance (ATA) - Temperature Control Valve	52125	TEMP CONTROL VALVE	29-11-TCV-1301	1	
338	20-1523	Annual Maintenance (ATA) - Level Switch	52126	LEVEL SWITCH LOW LOW	29-11-LSLL-1301	1	
339	20-1524	Annual Maintenance (ATA) - Level Switch	52127	LEVEL SWITCH LOW LOW	29-11-LSLL-1302	1	
340	20-1112	Annual Maintenance (ATA) - Temperature Control Valve	52128	TEMP CONTROL VALVE	29-11-TCV-1302	1	
341	20-1433	Annual Maintenance (ATA) - Pressure Transmitter	52132	PRESSURE TRANSMITTER	29-11-PT-1305	1	
342	20-1066	Annual Maintenance (ATA) - Pressure Control Valve	52155	PRESSURE CONTROL VALVE	29-11-PCV-1502	1	
343	20-677	Annual Maintenance (ATA) - Pressure Safety Valve	52157	PRESSURE SAFETY VALVE	29-11-PSV-1501	1	
344	20-1434	Annual Maintenance (ATA) - Pressure Transmitter	52190	PRESSURE TRANSMITTER	29-12-PT-1101	1	
345	20-1435	Annual Maintenance (ATA) - Pressure Transmitter	52191	PRESSURE TRANSMITTER	29-12-PT-1102	1	
346	20-1436	Annual Maintenance (ATA) - Pressure Transmitter	52192	PRESSURE TRANSMITTER	29-12-PT-1103	1	
347	20-1527	Annual Maintenance (ATA) - Level Switch	52193	LEVEL SWITCH HIGH HIGH	29-12-LSHH-1101	1	

348	20-1369	Annual Maintenance (ATA) - Level Control Valve	52194	LEVEL CONTROL VALVE	29-12-LCV-1101	1	
349	20-1067	Annual Maintenance (ATA) - Pressure Control Valve	52195	PRESSURE CONTROL VALVE	29-12-PCV-1101	1	
350	20-678	Annual Maintenance (ATA) - Pressure Safety Valve	52196	PRESSURE SAFETY VALVE	29-12-PSV-1112	1	
351	20-1638	Annual Maintenance (ATA) - Emergency Shutdown /ON OFF Valve	52198	SHUT DOWN VALVE	29-12-SDV-1101	1	
352	20-1639	Annual Maintenance (ATA) - Emergency Shutdown /ON OFF Valve	52199	SHUT DOWN VALVE	29-12-SDV-1102	1	
353	20-1437	Annual Maintenance (ATA) - Pressure Transmitter	52206	PRESSURE TRANSMITTER	29-12-PT-1201	1	
354	20-1438	Annual Maintenance (ATA) - Pressure Transmitter	52209	PRESSURE TRANSMITTER	29-12-PT-1204	1	
355	20-1439	Annual Maintenance (ATA) - Pressure Transmitter	52210	PRESSURE TRANSMITTER	29-12-PT-1205	1	
356	20-1525	Annual Maintenance (ATA) - Level Switch	52217	LEVEL SWITCH	29-12-LS-1201	1	
357	20-1526	Annual Maintenance (ATA) - Level Switch	52218	LEVEL SWITCH	29-12-LS-1202	1	
358	20-1113	Annual Maintenance (ATA) - Temperature Control Valve	52220	TEMP CONTROL VALVE	29-12-TCV-1201	1	
359	20-1114	Annual Maintenance (ATA) - Temperature Control Valve	52221	TEMP CONTROL VALVE	29-12-TCV-1202	1	
360	20-1440	Annual Maintenance (ATA) - Pressure Transmitter	52222	PRESSURE TRANSMITTER	29-12-PT-1206	1	
361	20-679	Annual Maintenance (ATA) - Pressure Safety Valve	52223	PRESSURE SAFETY VALVE	29-12-PSV-1201	1	
362	20-680	Annual Maintenance (ATA) - Pressure Safety Valve	52224	PRESSURE SAFETY VALVE	29-12-PSV-1202	1	
363	20-681	Annual Maintenance (ATA) - Pressure Safety Valve	52225	PRESSURE SAFETY VALVE	29-12-PSV-1203	1	
364	20-1115	Annual Maintenance (ATA) - Temperature Control Valve	52229	TEMP CONTROL VALVE	29-12-TCV-1301	1	
365	20-1528	Annual Maintenance (ATA) - Level Switch	52230	LEVEL SWITCH LOW LOW	29-12-LSLL-1301	1	
366	20-1529	Annual Maintenance (ATA) - Level Switch	52231	LEVEL SWITCH LOW LOW	29-12-LSLL-1302	1	
367	20-1116	Annual Maintenance (ATA) - Temperature Control Valve	52232	TEMP CONTROL VALVE	29-12-TCV-1302	1	

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368	20-1441	Annual Maintenance (ATA) - Pressure Transmitter	52236	PRESSURE TRANSMITTER	29-12-PT-1305	1	
369	20-1068	Annual Maintenance (ATA) - Pressure Control Valve	52259	PRESSURE CONTROL VALVE	29-12-PCV-1502	1	
370	20-682	Annual Maintenance (ATA) - Pressure Safety Valve	52261	PRESSURE SAFETY VALVE	29-12-PSV-1501	1	
371	20-1495	Annual Maintenance (ATA) - Flow Transmitter	52263	FLOW TRANSMITTER	30-FT-3021	1	
372	20-637	Annual Maintenance (ATA) - Level Transmitter	52271	LEVEL TRANSMITTER	30-LT-3001	1	
373	20-1387	Annual Maintenance (ATA) - Level Control Valve	52272	LEVEL CONTROL VALVE	30-LV-3001	1	
374	20-1707	Annual Maintenance (ATA) - Emergency Shutdown /ON OFF Valve	52273	SHUT DOWN VALVE	30-SDV-3001	1	
375	20-1587	Annual Maintenance (ATA) - Level Switch	52274	LEVEL SWITCH LOW LOW	30-LSLL-3003	1	
376	20-1614	Annual Maintenance (ATA) - Pressure Switch	52278	PRESSURE SWITCH HIGH HIGH	30-PSHH-3002	1	
377	20-733	Annual Maintenance (ATA) - Pressure Safety Valve	52281	PRESSURE SAFETY VALVE	30-PSV-3002	1	
378	20-1117	Annual Maintenance (ATA) - Temperature Control Valve	52282	TEMP CONTROL VALVE	30-TV-3004	1	
379	20-1118	Annual Maintenance (ATA) - Temperature Control Valve	52285	TEMP CONTROL VALVE	30-TV-3010	1	
380	20-734	Annual Maintenance (ATA) - Pressure Safety Valve	52288	PRESSURE SAFETY VALVE	30-PSV-3003	1	
381	20-1457	Annual Maintenance (ATA) - Pressure Transmitter	52289	PRESSURE TRANSMITTER	30-PT-3001	1	
382	20-1589	Annual Maintenance (ATA) - Level Switch	52291	LEVEL SWITCH LOW LOW	30-LSLL-3024	1	
383	20-639	Annual Maintenance (ATA) - Level Transmitter	52292	LEVEL TRANSMITTER	30-LT-3025	1	
384	20-1079	Annual Maintenance (ATA) - Pressure Control Valve	52293	PRESSURE CONTROL VALVE	30-PV-3026A	1	
385	20-1080	Annual Maintenance (ATA) - Pressure Control Valve	52294	PRESSURE CONTROL VALVE	30-PV-3026B	1	
386	20-1708	Annual Maintenance (ATA) - Emergency Shutdown /ON OFF Valve	52295	SHUT DOWN VALVE	30-SDV-3021	1	
387	20-638	Annual Maintenance (ATA) - Level Transmitter	52309	LEVEL TRANSMITTER	30-LT-3021	1	
388	20-1588	Annual Maintenance (ATA) - Level Switch	52311	LEVEL SWITCH LOW LOW	30-LSLL-3022	1	
389	20-1615	Annual Maintenance (ATA) - Pressure Switch	52313	PRESSURE SWITCH HIGH HIGH	30-PSHH-3024	1	

390	20-735	Annual Maintenance (ATA) - Pressure Safety Valve	52317	PRESSURE SAFE TY VALVE	30-PSV- 3022	1	
391	20-736	Annual Maintenance (ATA) - Pressure Safety Valve	52329	PRESSURE SAFE TY VALVE	30-PSV- 3041	1	
392	20- 1496	Annual Maintenance (ATA) - Flow Transmitter	52332	FLOW TRANSMI TTER	30-FT- 3041	1	
393	20- 1389	Annual Maintenance (ATA) - Level Control Valve	52333	LEVEL CONTROL VALVE	30-LV- 3021B	1	
394	20- 1709	Annual Maintenance (ATA) - Emergency Shutdown /ON OFF Valve	52334	SHUT DOWN VA LVE	30-SDV- 3041	1	
395	20- 1388	Annual Maintenance (ATA) - Level Control Valve	52335	LEVEL CONTROL VALVE	30-LV- 3021A	1	
396	20-732	Annual Maintenance (ATA) - Pressure Safety Valve	52348	PRESSURE SAFE TY VALVE	30-PSV- 3001	1	
397	20- 1077	Annual Maintenance (ATA) - Pressure Control Valve	52349	PRESSURE CON TROL VALVE	30-PV- 3001A	1	
398	20- 1078	Annual Maintenance (ATA) - Pressure Control Valve	52350	PRESSURE CON TROL VALVE	30-PV- 3001B	1	
399	20- 1596	Annual Maintenance (ATA) - Pressure Switch	52363	PRESSURE SWIT CH	33-PS- 3302	1	
400	20- 1497	Annual Maintenance (ATA) - Flow Transmitter	52365	FLOW TRANSMI TTER	33-FT- 3301	1	
401	20- 1355	Annual Maintenance (ATA) - Flow Control Valve	52366	FLOW CONTROL VALVE	33-FV- 3301	1	
402	20-737	Annual Maintenance (ATA) - Pressure Safety Valve	52367	PRESSURE SAFE TY VALVE	33-PSV- 3301	1	
403	20-738	Annual Maintenance (ATA) - Pressure Safety Valve	52368	PRESSURE SAFE TY VALVE	33-PSV- 3302	1	
404	20-640	Annual Maintenance (ATA) - Level Transmitter	52401	LEVEL TRANSMI TTER	50-LT- 5002	1	
405	20-641	Annual Maintenance (ATA) - Level Transmitter	52402	LEVEL TRANSMI TTER	51-LT- 5101	1	
406	20- 1458	Annual Maintenance (ATA) - Pressure Transmitter	52403	PRESSURE TRAN SMITTER	51-PT- 5101	1	
407	20- 1619	Annual Maintenance (ATA) - Pressure Switch	52406	PRESSURE SWIT CH LOW	51-PSL- 5101	1	
408	20- 1603	Annual Maintenance (ATA) - Pressure Switch	52407	PRESSURE SWIT CH HIGH	51-PSH- 5101	1	
409	20- 1081	Annual Maintenance (ATA) - Pressure Control Valve	52408	PRESSURE CON TROL VALVE	51-PV- 5101	1	
410	20- 1620	Annual Maintenance (ATA) - Pressure Switch	52410	PRESSURE SWIT CH LOW	51-PSL- 5121	1	
411	20- 1604	Annual Maintenance (ATA) - Pressure Switch	52411	PRESSURE SWIT CH HIGH	51-PSH- 5121	1	
412	20- 1361	Annual Maintenance (ATA) - Flow Control Valve	52413	FLOW CONTROL VALVE	51-FV- 5171	1	
413	20- 1358	Annual Maintenance (ATA) - Flow Control Valve	52415	FLOW CONTROL VALVE	51-FV- 5141	1	
414	20- 1359	Annual Maintenance (ATA) - Flow Control Valve	52416	FLOW CONTROL VALVE	51-FV- 5151	1	
415	20- 1360	Annual Maintenance (ATA) - Flow Control Valve	52418	FLOW CONTROL VALVE	51-FV- 5161	1	
416	20- 1356	Annual Maintenance (ATA) - Flow Control Valve	52423	FLOW CONTROL VALVE	51-FV- 5131A	1	

417	20-1357	Annual Maintenance (ATA) - Flow Control Valve	52424	FLOW CONTROL VALVE	51-FV-5131B	1	
418	20-1567	Annual Maintenance (ATA) - Level Switch	52446	LEVEL SWITCH HIGH HIGH	52-LSHH-5211	1	
419	20-642	Annual Maintenance (ATA) - Level Transmitter	52447	LEVEL TRANSMITTER	52-LT-5211	1	
420	20-1390	Annual Maintenance (ATA) - Level Control Valve	52448	LEVEL CONTROL VALVE	52-LV-5203	1	
421	20-1498	Annual Maintenance (ATA) - Flow Transmitter	52451	FLOW TRANSMITTER	52-FT-5201	1	
422	20-1459	Annual Maintenance (ATA) - Pressure Transmitter	52453	PRESSURE TRANSMITTER	52-PT-5202	1	
423	20-1616	Annual Maintenance (ATA) - Pressure Switch	52454	PRESSURE SWITCH HIGH HIGH	52-PSHH-5201	1	
424	20-1082	Annual Maintenance (ATA) - Pressure Control Valve	52455	PRESSURE CONTROL VALVE	52-PV-5201	1	
425	20-1710	Annual Maintenance (ATA) - Emergency Shutdown /ON OFF Valve	52456	SHUT DOWN VALVE	52-SDV-5201	1	
426	20-1460	Annual Maintenance (ATA) - Pressure Transmitter	52458	PRESSURE TRANSMITTER	52-PT-5204	1	
427	20-1083	Annual Maintenance (ATA) - Pressure Control Valve	52459	PRESSURE CONTROL VALVE	52-PV-5204	1	
428	20-643	Annual Maintenance (ATA) - Level Transmitter	52461	LEVEL TRANSMITTER	54-LT-5401	1	
429	20-644	Annual Maintenance (ATA) - Level Transmitter	52464	LEVEL TRANSMITTER	54-LT-5403	1	
430	20-1605	Annual Maintenance (ATA) - Pressure Switch	52470	PRESSURE SWITCH HIGH	54-PSH-5421	1	
431	20-1621	Annual Maintenance (ATA) - Pressure Switch	52471	PRESSURE SWITCH LOW	54-PSL-5421	1	
432	20-1569	Annual Maintenance (ATA) - Level Switch	52487	LEVEL SWITCH HIGH HIGH	55-LSHH-5501	1	
433	20-1573	Annual Maintenance (ATA) - Level Switch	52488	LEVEL SWITCH HIGH LOW	55-LSHL-5502	1	
434	20-1119	Annual Maintenance (ATA) - Temperature Control Valve	52555	TEMP CONTROL VALVE	58-TCV-5801A	1	
435	20-1461	Annual Maintenance (ATA) - Pressure Transmitter	52567	PRESSURE TRANSMITTER	58-PT-5802A	1	
436	20-1120	Annual Maintenance (ATA) - Temperature Control Valve	52575	TEMP CONTROL VALVE	58-TCV-5801B	1	
437	20-1462	Annual Maintenance (ATA) - Pressure Transmitter	52587	PRESSURE TRANSMITTER	58-PT-5802B	1	
438	20-739	Annual Maintenance (ATA) - Pressure Safety Valve	52591	PRESSURE SAFETY VALVE	58-PSV-5802	1	
439	20-1556	Annual Maintenance (ATA) - Level Switch	52609	Level Switch	62-LS-6203	1	
440	20-1558	Annual Maintenance (ATA) - Level Switch	52610	Level Switch	62-LSH-6204	1	

441	20-1559	Annual Maintenance (ATA) - Level Switch	52611	LEVEL SWITCH HIGH	62-LSH-6207	1	
442	20-1571	Annual Maintenance (ATA) - Level Switch	52612	Level Switch	62-LSHH-6201	1	
443	20-1572	Annual Maintenance (ATA) - Level Switch	52613	LEVEL SWITCH HIGH HIGH	62-LSHH-6206	1	
444	20-1576	Annual Maintenance (ATA) - Level Switch	52614	Level Switch	62-LSL-6202	1	
445	20-1071	Annual Maintenance (ATA) - Pressure Control Valve	52628	PRESSURE CON TROL VALVE	62-PCV-6205	1	
446	20-628	Annual Maintenance (ATA) - Level Transmitter	52641	LEVEL TRANSMI TTER	63-6303-LT-02	1	
447	20-627	Annual Maintenance (ATA) - Level Transmitter	52646	LEVEL TRANSMI TTER	63-6303-LT-01	1	
448	20-1543	Annual Maintenance (ATA) - Level Switch	52777	LEVEL SWITCH	71-7107-LS-1	1	
449	20-691	Annual Maintenance (ATA) - Pressure Safety Valve	52781	PRESSURE SAFE TY VALVE	71-7107-PSV-1	1	
450	20-1650	Annual Maintenance (ATA) - Emergency Shutdown /ON OFF Valve	52783	ON OFF VALVE	71-7108-SDV-1	1	
451	20-1651	Annual Maintenance (ATA) - Emergency Shutdown /ON OFF Valve	52785	ON OFF VALVE	71-7108-SDV-2	1	
452	20-1652	Annual Maintenance (ATA) - Emergency Shutdown /ON OFF Valve	52787	ON OFF VALVE	71-7108-SDV-3	1	
453	20-1544	Annual Maintenance (ATA) - Level Switch	52789	LEVEL SWITCH	71-7108-LS-1	1	
454	20-692	Annual Maintenance (ATA) - Pressure Safety Valve	52793	PRESSURE SAFE TY VALVE	71-7108-PSV-1	1	
455	20-1653	Annual Maintenance (ATA) - Emergency Shutdown /ON OFF Valve	52795	ON OFF VALVE	71-7109-SDV-1	1	
456	20-1654	Annual Maintenance (ATA) - Emergency Shutdown /ON OFF Valve	52797	ON OFF VALVE	71-7109-SDV-2	1	
457	20-1655	Annual Maintenance (ATA) - Emergency Shutdown /ON OFF Valve	52799	ON OFF VALVE	71-7109-SDV-3	1	
458	20-1545	Annual Maintenance (ATA) - Level Switch	52801	LEVEL SWITCH	71-7109-LS-1	1	
459	20-693	Annual Maintenance (ATA) - Pressure Safety Valve	52805	PRESSURE SAFE TY VALVE	71-7109-	1	

					PSV-1		
460	20-1656	Annual Maintenance (ATA) - Emergency Shutdown /ON OFF Valve	52807	ON OFF VALVE	71- 7110- SDV-1	1	
461	20-1657	Annual Maintenance (ATA) - Emergency Shutdown /ON OFF Valve	52809	ON OFF VALVE	71- 7110- SDV-2	1	
462	20-1658	Annual Maintenance (ATA) - Emergency Shutdown /ON OFF Valve	52811	ON OFF VALVE	71- 7110- SDV-3	1	
463	20-1546	Annual Maintenance (ATA) - Level Switch	52813	LEVEL SWITCH	71- 7110-LS- 1	1	
464	20-667	Annual Maintenance (ATA) - Pressure Safety Valve	52817	PRESSURE SAFE TY VALVE	71-10- PSV-1	1	
465	20-1659	Annual Maintenance (ATA) - Emergency Shutdown /ON OFF Valve	52819	ON OFF VALVE	71- 7111- SDV-1	1	
466	20-1660	Annual Maintenance (ATA) - Emergency Shutdown /ON OFF Valve	52821	ON OFF VALVE	71- 7111- SDV-2	1	
467	20-1661	Annual Maintenance (ATA) - Emergency Shutdown /ON OFF Valve	52823	ON OFF VALVE	71- 7111- SDV-3	1	
468	20-1547	Annual Maintenance (ATA) - Level Switch	52825	LEVEL SWITCH	71- 7111-LS- 1	1	
469	20-694	Annual Maintenance (ATA) - Pressure Safety Valve	52829	PRESSURE SAFE TY VALVE	71- 7111- PSV-1	1	
470	20-1662	Annual Maintenance (ATA) - Emergency Shutdown /ON OFF Valve	52831	ON OFF VALVE	71- 7112- SDV-1	1	
471	20-1663	Annual Maintenance (ATA) - Emergency Shutdown /ON OFF Valve	52833	ON OFF VALVE	71- 7112- SDV-2	1	
472	20-1664	Annual Maintenance (ATA) - Emergency Shutdown /ON OFF Valve	52835	ON OFF VALVE	71- 7112- SDV-3	1	
473	20-1548	Annual Maintenance (ATA) - Level Switch	52837	LEVEL SWITCH	71- 7112-LS- 1	1	
474	20-695	Annual Maintenance (ATA) - Pressure Safety Valve	52841	PRESSURE SAFE TY VALVE	71- 7112- PSV-1	1	
475	20-1665	Annual Maintenance (ATA) - Emergency Shutdown /ON OFF Valve	52843	ON OFF VALVE	71- 7113- SDV-1	1	

476	20-1666	Annual Maintenance (ATA) - Emergency Shutdown /ON OFF Valve	52845	ON OFF VALVE	71- 7113- SDV-2	1	
477	20-1667	Annual Maintenance (ATA) - Emergency Shutdown /ON OFF Valve	52847	ON OFF VALVE	71- 7113- SDV-3	1	
478	20-1549	Annual Maintenance (ATA) - Level Switch	52849	LEVEL SWITCH	71- 7113-LS- 1	1	
479	20-1668	Annual Maintenance (ATA) - Emergency Shutdown /ON OFF Valve	52855	ON OFF VALVE	71- 7114- SDV-1	1	
480	20-1669	Annual Maintenance (ATA) - Emergency Shutdown /ON OFF Valve	52857	ON OFF VALVE	71- 7114- SDV-2	1	
481	20-1670	Annual Maintenance (ATA) - Emergency Shutdown /ON OFF Valve	52859	ON OFF VALVE	71- 7114- SDV-3	1	
482	20-1550	Annual Maintenance (ATA) - Level Switch	52861	LEVEL SWITCH	71- 7114-LS- 1	1	
483	20-696	Annual Maintenance (ATA) - Pressure Safety Valve	52865	PRESSURE SAFE TY VALVE	71- 7114- PSV-1	1	
484	20-1671	Annual Maintenance (ATA) - Emergency Shutdown /ON OFF Valve	52867	ON OFF VALVE	71- 7115- SDV-1	1	
485	20-1672	Annual Maintenance (ATA) - Emergency Shutdown /ON OFF Valve	52869	ON OFF VALVE	71- 7115- SDV-2	1	
486	20-1673	Annual Maintenance (ATA) - Emergency Shutdown /ON OFF Valve	52871	ON OFF VALVE	71- 7115- SDV-3	1	
487	20-1551	Annual Maintenance (ATA) - Level Switch	52873	LEVEL SWITCH	71- 7115-LS- 1	1	
488	20-697	Annual Maintenance (ATA) - Pressure Safety Valve	52877	PRESSURE SAFE TY VALVE	71- 7115- PSV-1	1	
489	20-1674	Annual Maintenance (ATA) - Emergency Shutdown /ON OFF Valve	52879	ON OFF VALVE	71- 7116- SDV-1	1	
490	20-1675	Annual Maintenance (ATA) - Emergency Shutdown /ON OFF Valve	52881	ON OFF VALVE	71- 7116- SDV-2	1	
491	20-1676	Annual Maintenance (ATA) - Emergency Shutdown /ON OFF Valve	52883	ON OFF VALVE	71- 7116- SDV-3	1	

492	20-1552	Annual Maintenance (ATA) - Level Switch	52885	LEVEL SWITCH	71-7116-LS-1	1	
493	20-698	Annual Maintenance (ATA) - Pressure Safety Valve	52889	PRESSURE SAFETY VALVE	71-7116-PSV-1	1	
494	20-1677	Annual Maintenance (ATA) - Emergency Shutdown /ON OFF Valve	52891	ON OFF VALVE	71-7117-SDV-1	1	
495	20-1678	Annual Maintenance (ATA) - Emergency Shutdown /ON OFF Valve	52893	ON OFF VALVE	71-7117-SDV-2	1	
496	20-1679	Annual Maintenance (ATA) - Emergency Shutdown /ON OFF Valve	52895	ON OFF VALVE	71-7117-SDV-3	1	
497	20-1553	Annual Maintenance (ATA) - Level Switch	52897	LEVEL SWITCH	71-7117-LS-1	1	
498	20-699	Annual Maintenance (ATA) - Pressure Safety Valve	52901	PRESSURE SAFETY VALVE	71-7117-PSV-1	1	
499	20-1680	Annual Maintenance (ATA) - Emergency Shutdown /ON OFF Valve	52903	ON OFF VALVE	71-7118-SDV-1	1	
500	20-1681	Annual Maintenance (ATA) - Emergency Shutdown /ON OFF Valve	52905	ON OFF VALVE	71-7118-SDV-2	1	
501	20-1682	Annual Maintenance (ATA) - Emergency Shutdown /ON OFF Valve	52907	ON OFF VALVE	71-7118-SDV-3	1	
502	20-1554	Annual Maintenance (ATA) - Level Switch	52909	LEVEL SWITCH	71-7118-LS-1	1	
503	20-700	Annual Maintenance (ATA) - Pressure Safety Valve	52913	PRESSURE SAFETY VALVE	71-7118-PSV-1	1	
504	20-1683	Annual Maintenance (ATA) - Emergency Shutdown /ON OFF Valve	52915	ON OFF VALVE	71-7120-SDV-1	1	
505	20-1684	Annual Maintenance (ATA) - Emergency Shutdown /ON OFF Valve	52917	ON OFF VALVE	71-7120-SDV-2	1	
506	20-1685	Annual Maintenance (ATA) - Emergency Shutdown /ON OFF Valve	52919	ON OFF VALVE	71-7120-SDV-3	1	
507	20-1555	Annual Maintenance (ATA) - Level Switch	52921	LEVEL SWITCH	71-7120-LS-1	1	
508	20-701	Annual Maintenance (ATA) - Pressure Safety Valve	52925	PRESSURE SAFETY VALVE	71-7120-PSV-1	1	

509	20-1597	Annual Maintenance (ATA) - Pressure Switch	52980	PRESSURE SWITCH	80-PS-8001A	1	
510	20-1598	Annual Maintenance (ATA) - Pressure Switch	53028	PRESSURE SWITCH	80-PS-8001B	1	
511	20-1599	Annual Maintenance (ATA) - Pressure Switch	53074	PRESSURE SWITCH	80-PS-8001C	1	
512	20-1473	Annual Maintenance (ATA) - Temperature Transmitter	53339	TEMPERATURE TRANSMITTER	90-9000-TT-01	1	
513	20-1450	Annual Maintenance (ATA) - Pressure Transmitter	53342	PRESSURE TRANSMITTER	90-9000-PT-01	1	
514	20-1474	Annual Maintenance (ATA) - Temperature Transmitter	53345	TEMPERATURE TRANSMITTER	90-9000-TT-02	1	
515	20-1362	Annual Maintenance (ATA) - Flow Control Valve	53372	Flow Control Valve	60-FV-6012	1	
516	20-1363	Annual Maintenance (ATA) - Flow Control Valve	53373	Flow Control Valve	60-FV-6022	1	
517	20-1499	Annual Maintenance (ATA) - Flow Transmitter	53382	Flow Transmitter	60-FT-6012	1	
518	20-1557	Annual Maintenance (ATA) - Level Switch	53394	Level Switch	60-LSH-6003	1	
519	20-1575	Annual Maintenance (ATA) - Level Switch	53395	Level Switch High	60-LSL-6002	1	
520	20-1590	Annual Maintenance (ATA) - Level Switch	53396	Level Switch Low Low	60-LSLL-6001	1	
521	20-1625	Annual Maintenance (ATA) - Pressure Switch	53417	Pressure Switch Low Low	60-PSLL-6023	1	
522	20-1626	Annual Maintenance (ATA) - Pressure Switch	53418	Pressure Switch Low Low	60-SLL-6043	1	
523	20-1711	Annual Maintenance (ATA) - Emergency Shutdown /ON OFF Valve	53419	Main Fuel Valve	60-SDV-6021	1	
524	20-1712	Annual Maintenance (ATA) - Emergency Shutdown /ON OFF Valve	53420	Shutdown Valve	60-SDV-6022	1	
525	20-1713	Annual Maintenance (ATA) - Emergency Shutdown /ON OFF Valve	53421	Main Fuel Vent Valve	60-SDV-6023	1	
526	20-1714	Annual Maintenance (ATA) - Emergency Shutdown /ON OFF Valve	53422	Pilot Shutdown Valve	60-SDV-6024	1	
527	20-1715	Annual Maintenance (ATA) - Emergency Shutdown /ON OFF Valve	53423	Main Fuel Valve	60-SDV-6041	1	
528	20-1716	Annual Maintenance (ATA) - Emergency Shutdown /ON OFF Valve	53424	Shutdown Valve	60-SDV-6042	1	
529	20-1717	Annual Maintenance (ATA) - Emergency Shutdown /ON OFF Valve	53425	Main Fuel Vent Valve	60-SDV-6043	1	

530	20-1718	Annual Maintenance (ATA) - Emergency Shutdown /ON OFF Valve	53426	Pilot Shutdown Valve	60-SDV-6044	1	
531	20-1565	Annual Maintenance (ATA) - Temperature Switch	53432	Temperature Switch High High	60-TSHH-6022	1	
532	20-1568	Annual Maintenance (ATA) - Temperature Switch	53433	Temperature Switch	60-TSHH-6042	1	
533	20-1566	Annual Maintenance (ATA) - Temperature Switch	53434	Temperature Switch	60-TSHH-6024	1	
534	20-1570	Annual Maintenance (ATA) - Temperature Switch	53435	Temperature Switch	60-TSHH-6044	1	
535	20-740	Annual Maintenance (ATA) - Pressure Safety Valve	53440	PRESSURE SAFETY VALVE	60-PSV-6001	1	
536	20-1463	Annual Maintenance (ATA) - Pressure Transmitter	53441	Pressure Transmitter	60-PT-6003	1	
537	20-645	Annual Maintenance (ATA) - Level Transmitter	53452	Level Transmitter	65-LT-6551	1	
538	20-646	Annual Maintenance (ATA) - Level Transmitter	53453	Level Transmitter	65-LT-6560	1	
539	20-647	Annual Maintenance (ATA) - Level Transmitter	53454	Level Transmitter	65-LT-6563	1	
540	20-1577	Annual Maintenance (ATA) - Level Switch	53465	Level Switch	65-LSL-6558	1	
541	20-1578	Annual Maintenance (ATA) - Level Switch	53466	Level Switch	65-LSL-6559	1	
542	20-1579	Annual Maintenance (ATA) - Level Switch	53467	Level Switch	65-LSL-6562	1	
543	20-1591	Annual Maintenance (ATA) - Level Switch	53468	Level Switch	65-LSLL-6563	1	
544	20-1622	Annual Maintenance (ATA) - Pressure Switch	53487	Pressure Switch	65-PSL-6571	1	
545	20-1464	Annual Maintenance (ATA) - Pressure Transmitter	53488	Pressure Transmitter	65-PT-6566	1	
546	20-1465	Annual Maintenance (ATA) - Pressure Transmitter	53489	Pressure Transmitter	65-PT-6569	1	
547	20-1466	Annual Maintenance (ATA) - Pressure Transmitter	53490	Pressure Transmitter	65-PT-6573	1	
548	20-1719	Annual Maintenance (ATA) - Emergency Shutdown /ON OFF Valve	53492	Shutdown Valve	65-SDV-6551	1	
549	20-1561	Annual Maintenance (ATA) - Temperature Switch	53507	Temperature Switch	65-TSH-6552	1	
550	20-1563	Annual Maintenance (ATA) - Temperature Switch	53508	Temperature Switch	65-TSH-6555	1	
551	20-690	Annual Maintenance (ATA) - Pressure Safety Valve	53538	Pressure Safety Valve	20-2005-PSV-01	1	
552	20-1801	Annual Maintenance (ATA) - BLOW DOWN VALVE	53469	ON-OFF VALVE	65-BDV-6552	1	
553	20-1800	Annual Maintenance (ATA) - BLOW DOWN VALVE	52301	BLOW DOWN VALVE	30-BDV-3022	1	

554	20-1799	Annual Maintenance (ATA) - BLOW DOWN VALVE	52351	BLOW DOWN V ALVE	30-BDV- 3001-01	1	
555	20-1798	Annual Maintenance (ATA) - BLOW DOWN VALVE	51836	BLOW DOWN V ALVE	27-BDV- 2702-01	1	
556	20-1797	Annual Maintenance (ATA) - BLOW DOWN VALVE	51725	BLOW DOWN V ALVE	26-BDV- 2633	1	
557	20-1796	Annual Maintenance (ATA) - BLOW DOWN VALVE	51268	ON-OFF-Valve	20- 2003- BDV-05	1	
558	20-1794	Annual Maintenance (ATA) - BLOW DOWN VALVE	51224	ON OFF Valve	20- 2001- BDV-05	1	
559	20-1795	Annual Maintenance (ATA) - BLOW DOWN VALVE	51242	ON OFF Valve	20- 2002- BDV-06	1	
560	20-1793	Annual Maintenance (ATA) - BLOW DOWN VALVE	51217	ON-OFF VALVE	20- 1700- BDV-01	1	
561	20-1791	Annual Maintenance (ATA) - BLOW DOWN VALVE	51211	ON-OFF VALVE	20- 1500- BDV-01	1	
562	20-1792	Annual Maintenance (ATA) - BLOW DOWN VALVE	51214	ON-OFF VALVE	20- 1600- BDV-01	1	
563	20-1789	Annual Maintenance (ATA) - BLOW DOWN VALVE	52093	BLOW DOWN V ALVE	29-11- BDV- 1103	1	
564	20-1790	Annual Maintenance (ATA) - BLOW DOWN VALVE	52197	BLOW DOWN V ALVE	29-12- BDV- 1103	1	
565	20-1788	Annual Maintenance (ATA) - BLOW DOWN VALVE	51989	BLOW DOWN V ALVE	29-10- BDV- 1103	1	
566	20-1787	Annual Maintenance (ATA) - BLOW DOWN VALVE	51578	BLOW DOWN V ALVE	20-03- BDV- 1103	1	
567	20-1786	Annual Maintenance (ATA) - BLOW DOWN VALVE	51473	BLOW DOWN V ALVE	20-02- BDV- 1103	1	
568	20-1785	Annual Maintenance (ATA) - BLOW DOWN VALVE	51368	BLOW DOWN V ALVE	20-01- BDV- 1103	1	
569	20-1784	Annual Maintenance (ATA) - BLOW DOWN VALVE	51936	BLOW DOWN V ALVE	29-01- BDV-01	1	
570	20-1783	Annual Maintenance (ATA) - Orbit Valves	51843	ON OFF VALVE	27-XV- 2712	1	
571	20-1782	Annual Maintenance (ATA) - Orbit Valves	51839	ON OFF VALVE	27-XV- 2711	1	
572	20-1781	Annual Maintenance (ATA) - Orbit Valves	51769	ON OFF VALVE	27-XV- 2709	1	
573	20-1780	Annual Maintenance (ATA) - Orbit Valves	51784	ON OFF VALVE	27-XV- 2708	1	
574	20-1779	Annual Maintenance (ATA) - Orbit Valves	51780	ON OFF VALVE	27-XV- 2706	1	
575	20-1778	Annual Maintenance (ATA) - Orbit Valves	51789	ON OFF VALVE	27-XV- 2704	1	
576	20-1777	Annual Maintenance (ATA) - Orbit Valves	51774	ON OFF VALVE	27-XV- 2703	1	

577	20-1776	Annual Maintenance (ATA) - Orbit Valves	51792	ON OFF VALVE	27-XV-2702	1	
578	20-1775	Annual Maintenance (ATA) - Orbit Valves	51765	ON OFF VALVE	27-XV-2701	1	
		GRAND TOTAL (ELECTRICAL+ MECHNICAL+ INSTRUMENT) inclusive of all applicable taxes except PST/ICT					

Note:

- Contractor should quote all the jobs and will not change serial # and quantity of any job.
- Bids are invited under Single stage two envelope.
- Financial evaluation will be carried out on Grand Total basis. Contract will be awarded to technically responsive and financially lowest evaluated bidder.
- The prices shall be quoted in Pak Rupees.
- The prices shall be inclusive of all taxes (except Provincial Sales Tax/ ICT Tax on Services, where applicable), duties, levies, charges etc. Provincial Sales Tax/ ICT Tax on Services, if applicable will be borne by OGDCL.
- **Payment Terms:** Payment will be made in Pak Rupees through cross cheque at actual against verified invoices after completion of ATA Job.
- **Duration of contract**

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

- Bid bond of PKR 500,000/- (Pak Rupees Five Hundred Thousand Only) must be submitted with the technical bid. Please see master set of tender documents (services) for further detail.
- The master set of tender documents (services) uploaded on OGDCL website (www.ogdcl.com) is the integral part of this TOR.

DETAILED SCOPE OF WORK FOR MECHANICAL, ELECTRICAL AND INSTRUMENT

Sr. No.	MODIFICAITON JOBS OF MECHANICAL SECTION FOR ATA-2020 (REV.01)	SIZING / CLASS	Cutting/Welding Joints	Material Required	Material Quantity Required	Services Required	Dia Inch	Locations
1	Rectification of closed drain line (6") leakge.	6",150#, RF	10	Pipe A-106	15 m	Rigging with fork lifter and crane	60	Plant
2	Installation of valve at membrane sales gas line near membrane skid for maintaining SSGC sale gas specification.	8", 300#, RF	3	Ball Valves/ Flanges	1 2	Rigging with fork lifter and crane	24	Membrane
3	Provision of recyle gas for compressor K-3001 from sales gas cooler down stream.	4", 300#, RF	15	Ball Valves	2	Rigging with fork lifter and crane	60	K-3001
4	Installation of block valve and Specticle Blind in HP line for manifold isolation.	8", 900#, RTJ	3	Ball Valve/ Specticl e Blind	1 1	Rigging with fork lifter and crane	24	CZ-2001
5	Installation of Specticle Blind in MP line for manifold isolation.	6", 600#, RF	2	Specticl e Blind	1	Rigging with fork lifter and crane	12	CZ-2002
6	Installation of Specticle Blind in LP line for manifold isolation.	8", 900#, RTJ	2	Specticl e Blind	2	Rigging with fork lifter and crane	16	CZ-2003
7	Installation of block valve and Specticle Blind in test separator line for manifold isolation.	4", 900#, RTJ	2	Ball Valve/ Specticl e Blind	1 1	Rigging with fork lifter and crane	8	Manifold
8	Fabrication & Installation of Bypass Line of Mercury Guard Bed (Additional Scope verbally informed by I/C Process) Note: Detailed BOQ and	8" x 600 Lbs.	33	Pipe A-106 Gr. B Flange Ball Valve Equal Tee Elbow 90 Degree	18 m 9 4 2 10 1 1 1	Rigging with fork lifter and crane	264	CZ-2731

Isometrics will be shared by I/C Process by 29-02-2020 so that timely material procurement can be planned by Mechanical Section.			Vent Valve 1" Sockolet Specticle Blind				
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Sr #	Job Title	Scope Of Work
1	Area motors maintenance	•Motors dismantling, shifting, Servicing ,Overhauling,bearing replacement Re-installation on skids as & when required
2	Cleaning and Servicing of Motor Control Module	•Checking and retightening of the module for loose connection •Checking and cleaning circuit breaker, magnetic contactor, overload relay, fuse, control circuit and power cables and replacement (if faulty).
3	Magging of Plant Motors along with Power Cables	•Magging of Motor windings and Power cables •Cleaning of Motors
4	Earth Resistance testing	•Earth resistance testing of all skid, motors and earth pits in plant area.
5	Lighting fixtures maintenance	•Area lighting fixtures cleaning, servicing and faulty components replcement and re-installation on skids
6	Cleaning and Servicing of 110 VDC & 24 VDC rectifier panels, 220 Volts UPS panel and their batteries.	•Checking and retightening the Panels and batteries terminals for loose connections •Cleaning of Panel and batteries, greasing of batteries terminals
7	Cleaning and Servicing of Air Circuit Breaker	ACBs of Switchgear panels, Bus Couplers, Outgoing/incoming feeder panels
8	Cleaning and Servicing of Generators and Generator Control Panels	•Checking and retightening the control and Power cables for loose connection •Checking and cleaning of circuit breakers, magnetic contactor, overload relay, control relays, fuse, control circuit and power cables and replacement (if faulty). •Testing and calibration of securities of Alternator and Engine
9	ACBs testing	ACBs testing/Callibration of PS-8000, PS-8005, PS-8006
10	New ACBs for generators switchgears	Modification,Installation & replacement of Generator new ACBs in MCC on availability of ACBs
11	New Circuit Breakers for MCC	Modification,Installation OF New CIRCUIT BEAKERS in existing MCCs (on availability of Material)
12	Lightening Arrestors installations	Lightening arrestors installation in condensate storage, LPG storage and Plant Area on availability of Materials
13	Step up/ Step down transformers servicing	3.3 kv step up/ downTransformers and switch gears inspection/Servicing

INSTRUMENTATION ACTIVITIES FOR ATA 2020				
Sr.No	Qty	SPECS	ACTIVITY DESCRIPTION	TOOLS and Spares
1	98	Complete overhauling Level, Pressure, Flow, Temperature Control Valves of various sizes up to 6", Rating 300 to 900CL	Dismantling from line, Inspection Inspection, Servicing Laping if required Spares replacement if required Hydro test, Calibration with process data Re-Installation (Positioner, SOV, Regulators, I/P also included in activity up to Inst Air Supply Valve)	All tools will be arranged by Contractor, Including Lathe Machine, and Hydro test bench, the Rigging and fitting also at contractor end. The SOV, Positioners and I/P converter Testing and Cal also carried out by contractor only trim spares, consumables and repair kits of CV's will be provided by OGDCL
2	150	Level, Pressure , Flow, Temperature TRANSMITTERS of various Makes-Most of them are SMART	Isolate the level transmitter Inspection, servicing, cleaning Power off Replace the spares if required Box up Installation Calibration Check the local Display / HMI CCR (The Trolls and chambers also included in activity)	All tools will be arranged by Contractor, Calibrator must be certified, the Rigging and fitting also at contractor end, spares and Consumables repair kits will be provided by OGDCL
3	137	Level, Pressure , Flow, Temperature Switches	Switch on Shutdown be put on Over ride / Bypass. Put on MOS. Isolate the system and drain the switch Disconnect the cables of Switch. Inspection and cleaning of Chamber If Ok calibrate the switch as per Set point If faulty shift into Workshop Replace the faulty spares and Box Up Installation	All tools will be arranged by Contractor, Calibrator must be certified, the Rigging and fitting also at contractor end, spares and Consumables repair kits will be provided by OGDCL
4	93	ESD's, SDV's, ON Off, Orbit Valves, Butterfly Valves	Dismantling from line for Inspection if required Complete over hauling, hydro tesing Machining at lather if passing problem Verify the limits with CCR Commission back at exact potion verify operation at DCS system	All tools will be arranged by Contractor, Calibrator must be certified, the Rigging and fitting also at contractor end, spares and Consumables repair kits will be provided by OGDCL
5	100	PSV's 1" to 6" of 300 to 900CL	Dismantling from line, Inspection Inspection, Servicing Laping if required Spares replacement if required Hydro test Calibration witness by process rep. Re-Installation	All tools will be arranged by Contractor, Including Lathe Machine, Safty bench with N2 Gas, the Rigging and fitting also at contractor end, Only trim spares, consumables and repair kits of PSV's will be provided by OGDCL

MECHANICAL SCOPE OF WORK FOR ATA-2020 (REV. NO. 01)

Activity #	Work Order No.	Job Description	Specifications
1	20-398	Pre-shutdown Activities	
		Connection for N2 Pumper	
		Depressurizing and N2 purging	
		Blinding of battery limits	
		Installation of scaffoldings as per each equipment job access requirement	
		Arrangement of cotton gloves, emery paper, cotton rags, anti-seize molykote and WD-40 by contractor	
		Removal of required insulation (cold & hot) after plant shutdown	
2	20-399	Post-shutdown Activities	
		Deblinding of battery limits	
		Leak Testing and N ₂ purging	
		Removal of all scaffoldings	
		Overall housekeeping/Area Cleaning	
		Cleaning of all equipment skids	
		Removal of all detected leakages, if any observed	
		Restoration of hot insulation after start-up / normal plant operation	
		Deployment of skilled manpower for plant startup jobs for 07 days	
		COLUMNS (TRAYED):	
3	20-355	Condensate Stabilizer Column	
		Isolation of the column / Blinding, if required	Height of Column :12,285 mm (with skirt)
		Dismantling of 03 Nos. manways	I.D. of Column : 760 mm
		Dismantling of associated spools if required	
		Ventilation / Confined Space Entry	Nos. of Manways : 03
		Initial Inspection of internals of column	Size of Manway : 20" x 300 Lbs. RF

		Chemical cleaning / water flushing of trays / internals of column	
		Dismantling & Fitting of trays, if required	
		Final inspection	
		Box-up	
		Deblinding, if any	
		Housekeeping of Area after job completion	
4	20-370	De-Ethannizer Column	
		Isolation of the column / Blinding, if required	Height of Column : 14,695 mm (with skirt)
		Dismantling of 03 Nos. manways	I.D. of Column : 1,219 mm
		Ventilation / Confined Space Entry	Nos. of Manways : 03
		Initial Inspection of internals of column	Size of Manway : 20" x 300 Lbs. RF
		Chemical cleaning / water flushing of trays / internals of column	
		Dismantling & Fitting of trays, if required	
		Final inspection	
		Box-up	
		Deblinding, if any	
		Housekeeping of Area after job completion	
5	20-386	De-Butanizer Column	
		Erection of Scaffolding	Height of Column : 26,656 mm (with skirt)
		Isolation of the column / Blinding, if required	I.D. of Column : 1,219 mm
		Dismantling of 04 Nos. manways	Nos. of Manways : 04
		Ventilation / Confined Space Entry	Size of Manway : 20" x 300 Lbs. RF
		Initial Inspection of internals of column	
		Chemical cleaning / water flushing of trays / internals of column	
		Dismantling & Fitting of trays, if required	
		Final inspection	
		Box-up	
		Deblinding, if any	

		Removal of Scaffolding	
		Housekeeping of Area after job completion	
6	20-390	Inspection of Flare Stack Tip	
		Safety clearance requirements	
		Arrangement of crane & cradle for access to the flare top	
		Inspection of flare stack tip.	
		BEDS:	
7	20-395	Molecular Sieve Vessel	
		Erection of scaffolding	Vertical Vessel
		Isolation of vessel / blinding, if required	Size of Manways M1 & M2 = 20" x 900 Lbs. RTJ
		Dismantling of manway flanges	SIZE OF VESSEL :
		Ventilation / Safety clearance for confined space entry	ID = 1524 mm, Thickness = 60 mm
		Removal of alumina ball / molecular sieve / ceramic ball from vessel	Length (T/T)= 5420 mm
		Initial inspection of vessel and internals and repair, if required	VESSEL MEDIUM:
		Cleaning of complete vessel	Molecular Sieve / Gas
		Inspection / cleaning of associated piping	PACKING DETAIL:
		Refilling of alumina ball / molecular sieve / ceramic ball inside vessel	
		Cleaning / surface preparation of gasket seating surfaces	Ceramic ball packing at bottom of vessel
		Final inspection	Molecular Sieve at centre of vessel
		Box-up of vessel	Alumina ball at top of vessel
		Removal of scaffolding	
		Housekeeping of area after job completion	
8	20-396	Molecular Sieve Vessel	
		Erection of scaffolding	Vertical Vessel
		Isolation of vessel / blinding, if required	Size of Manways M1 & M2 = 20" x 900 Lbs. RTJ
		Dismantling of manway flanges	SIZE OF VESSEL :
		Ventilation / Safety clearance for confined space entry	ID = 1524 mm, Thickness = 60 mm

		Removal of alumina ball / molecular sieve / ceramic ball from vessel	Length (T/T)= 5420 mm
		Initial inspection of vessel and internals and repair, if required	VESSEL MEDIUM:
		Cleaning of complete vessel	Molecular Sieve / Gas
		Inspection / cleaning of associated piping	PACKING DETAIL:
		Refilling of alumina ball / molecular sieve / ceramic ball inside vessel	Ceramic ball packing at bottom of vessel
		Cleaning / surface preparation of gasket seating surfaces	Molecular Sieve at centre of vessel
		Final inspection	Alumina ball at top of vessel
		Box-up of vessel	
		Removal of scaffolding	
		Housekeeping of area after job completion	
9	20-397	Mercury Guard Bed	
		Erection of scaffolding	Vertical Vessel
		Isolation of vessel / blinding, if required	Size of Manways M1 & M2 = 20" x 600 Lbs. RF
		Dismantling of manway flanges	SIZE OF VESSEL :
		Ventilation / Safety clearance for confined space entry	ID = 1372 mm, Thickness = 44 mm
		Removal of alumina ball / mersorb from vessel	Length (T/T)= 3910 mm
		Initial inspection of vessel and internals and repair, if required	VESSEL MEDIUM:
		Cleaning of complete vessel	Packed Bed
		Inspection / cleaning of associated piping	PACKING DETAIL:
		Refilling of alumina ball / mersorb inside vessel	
		Cleaning / surface preparation of gasket seating surfaces	Alumina ball at bottom of vessel
		Final inspection	Mersorb at centre of vessel
		Box-up of vessel	
		Removal of scaffolding	
		Housekeeping of area after job completion	
10	20-400	Membrane Guard Bed Vessel	
			Vertical Vessel
		Isolation of vessel / blinding, if required	Size of Manways M1 & M2 = 20" x 600 Lbs. RF

		Dismantling of manway flanges	SIZE OF VESSEL :
		Ventilation / Safety clearance for confined space entry	ID = 1981 mm,
		Removal of alumina ball / mersorb from vessel	Length (T/T)= 4354 mm
		Initial inspection of vessel and internals and repair, if required	VESSEL MEDIUM:
		Cleaning of complete vessel	Packed Bed
		Inspection / cleaning of associated piping	
		Refilling of alumina ball / mersorb inside vessel	
		Cleaning / surface preparation of gasket seating surfaces	
		Final inspection	
		Box-up of vessel	
		Housekeeping of area after job completion	
11	20-452	Instrument Air Dryers (02 no.)	<ul style="list-style-type: none"> • Make: Deltech • Model# PS201-FMX4E 75 • Sr. No. 933PS297
12	20-456	Erection of scaffolding	
		Isolation of vessel / blinding, if required	
		Dismantling of flanges,/ covers	
		Removal of balls / mersorb from vessel	
		Cleaning of complete vessel	
		Inspection / cleaning of associated piping	
		Refilling of alumina ball / mersorb inside vessel	
		Final inspection	
		Box-up of vessel	
		Removal of scaffolding	
		Housekeeping of area after job completion	
		VESSELS:	
13	20-457	High Pressure Separator	
		Erection of scaffolding	Horizontal Vessel

		Isolation of vessel / blinding, if required	Size of Manway = 20" x 900 Lbs. LW. RTJ
		Dismantling of manway flanges	SIZE OF VESSEL :
		Ventilation / Safety clearance for confined space entry	ID = 1500 mm, Thickness = 60 mm
		Initial inspection of vessel and internals (Demister Pad, Block Valve & Vortex Breaker) and repair, if required	Length = 6081 mm
		Cleaning / flushing of complete vessel	VESSEL MEDIUM:
		Inspection / cleaning of strainers / Boot / NRVs of associated piping	Process Fluid
		Cleaning/surface preparation of gasket seating surfaces	
		Final inspection	
		Box-up of vessel	
		Removal of scaffolding	
		Housekeeping of area after job completion	
14	20-458	Medium Pressure Separator	
		Erection of scaffolding	Horizontal Vessel
		Isolation of vessel / blinding, if required	Size of Manway = 24" x 600 Lbs. LW. RF.
		Dismantling of manway flanges	SIZE OF VESSEL :
		Ventilation / Safety clearance for confined space entry	ID = 2700 mm, Thickness = 74 mm
		Initial inspection of vessel and internals (Demister Pad, Block Valve & Vortex Breaker) and repair, if required	Length = 10898 mm
		Cleaning / flushing of complete vessel	VESSEL MEDIUM:
		Inspection / cleaning of strainers / Boot / NRVs of associated piping	Process Fluid
		Cleaning/surface preparation of gasket seating surfaces	
		Final inspection	
		Box-up of vessel	
		Removal of scaffolding	
		Housekeeping of area after job completion	
15	20-459	Low Pressure Separator	
		Erection of scaffolding	Horizontal Vessel
		Isolation of vessel / blinding, if required	Size of Manway = 24" x 600 Lbs. LW. RF.

		Dismantling of manway flanges	SIZE OF VESSEL :
		Ventilation / Safety clearance for confined space entry	ID = 3000 mm, Thickness = 74 mm
		Initial inspection of vessel and internals (Demister Pad, Block Valve & Vortex Breaker) and repair, if required	Length = 9400 mm
		Cleaning / flushing of complete vessel	VESSEL MEDIUM:
		Inspection / cleaning of strainers / Boot / NRVs of associated piping	Process Fluid
		Cleaning/surface preparation of gasket seating surfaces	
		Final inspection	
		Box-up of vessel	
		Removal of scaffolding	
		Housekeeping of area after job completion	
16	20-460	Test Pressure Separator	
		Erection of scaffolding	Horizontal Vessel
		Isolation of vessel / blinding, if required	Size of Manway = 20"
		Dismantling of manway flanges	SIZE OF VESSEL :
		Ventilation / Safety clearance for confined space entry	(ID =660 mm, OD=750 mm) Thickness = 34 mm
		Initial inspection of vessel and internals and repair, if required	Length = 5158 mm
		Cleaning / flushing of complete vessel	VESSEL MEDIUM:
		Inspection / cleaning of strainers / Boot / NRVs of associated piping	Process Fluid
		Cleaning/surface preparation of gasket seating surfaces	
		Final inspection	
		Box-up of vessel	
		Removal of scaffolding	
		Housekeeping of area after job completion	
17	20-461	Jhakro Separator	
		Erection of scaffolding	Horizontal Vessel
		Isolation of vessel / blinding, if required	Size of Manway = 20" 900 RTJ
		Dismantling of manway flanges	SIZE OF VESSEL :
		Ventilation / Safety clearance for confined space entry	OD = 1220 mm,

		Initial inspection of vessel and internals and repair, if required	Length = 4370 mm
		Cleaning / flushing of complete vessel	VESSEL MEDIUM:
		Inspection / cleaning of strainers / Boot and associated piping	
		Cleaning/surface preparation of gasket seating surfaces	
		Final inspection	
		Box-up of vessel	
		Removal of scaffolding	
		Housekeeping of area after job completion	
18	20-462	Bitrism Separator	
		Erection of scaffolding	SEPARATOR, 3 PHASE, SIZE S/S LENGTH 20 ft, ID 5 ft, GAS 40 MMSCFD, OIL 2000 BPD, WATER 1500 BPD, DESIGN PRESSURE 2200 PSIG, DESIGN TEMPERATURE 180 F, NACE MR-01-75, CL 1500, RTJ VALVES
		Isolation of vessel / blinding, if required	
		Dismantling of manway flanges	
		Ventilation / Safety clearance for confined space entry	
		Initial inspection of vessel and internals and repair, if required	
		Cleaning / flushing of complete vessel	
		Inspection / cleaning of strainers / Boot and associated piping	
		Cleaning/surface preparation of gasket seating surfaces	
		Final inspection	
		Box-up of vessel	
		Removal of scaffolding	
		Housekeeping of area after job completion	
19	20-464	Produced Water Degasser	
		Erection of scaffolding	Vertical Vessel
		Isolation of vessel / blinding, if required	Size of Manway = 20" x 150 Lbs. RF.
		Dismantling of manway flanges	SIZE OF VESSEL :
		Ventilation / Safety clearance for confined space entry	ID = 1650 mm,
		Initial inspection of vessel and internals (Demister Pad, Block valves) and repair, if required	Length = 3962 mm
		Cleaning / flushing of complete vessel	VESSEL MEDIUM: Produced Water

		Inspection / cleaning of associated piping	
		Cleaning/surface preparation of gasket seating surfaces	Weight: 3220 KG
		Final inspection	
		Box-up of vessel	
		Removal of scaffolding	
		Housekeeping of area after job completion	
20	20-465	Inlet Separator	
		Erection of scaffolding	Horizontal Vessel
		Isolation of vessel / blinding, if required	Size of Manway = 20" x 600 Lbs. RF.
		Dismantling of manway flanges	SIZE OF VESSEL :
		Ventilation / Safety clearance for confined space entry	ID = 1524 mm, Thickness = 53 mm
		Initial inspection of vessel and internals (Demister Pad, Block valves) and repair, if required	Length = 5700 mm
		Cleaning / flushing of complete vessel	VESSEL MEDIUM:
		Inspection / cleaning of strainers / Boot / NRVs of associated piping	Condensate, Natural Gas, Water
		Cleaning/surface preparation of gasket seating surfaces	
		Final inspection	
		Box-up of vessel	
		Removal of scaffolding	
		Housekeeping of area after job completion	
21	20-467	Regeneration Gas Scrubber	
		Erection of scaffolding	Vertical Vessel
		Isolation of vessel / blinding, if required	Size of Manway = 20" x 600 Lbs. RF.
		Dismantling of manway flanges	SIZE OF VESSEL :
		Ventilation / Safety clearance for confined space entry	ID = 398.5 mm, Thickness = 29.36 mm
		Initial inspection of vessel and internals (Demister Pad, Block valves) and repair, if required	Length (T/T)= 2100 mm
		Cleaning / flushing of complete vessel	VESSEL MEDIUM:
		Inspection / cleaning of associated piping	
		Cleaning/surface preparation of gasket seating surfaces	

		Final inspection	
		Box-up of vessel	
		Removal of scaffolding	
		Housekeeping of area after job completion	
22	20-469	Turbo-Expander Inlet Scrubber	
		Erection of scaffolding	Vertical Vessel
		Isolation of vessel / blinding, if required	Size of Manway = 20"
		Dismantling of manway flanges	SIZE OF VESSEL :
		Ventilation / Safety clearance for confined space entry	ID = 1400 mm, Thickness = 60.3 mm
		Initial inspection of vessel and internals (Demister Pad, Block Valves) and repair, if required	Length (T/T)= 4350 mm
		Cleaning / flushing of complete vessel	VESSEL MEDIUM:
		Inspection / cleaning of associated piping	
		Installation of cold insulation at manway covers	
		Cleaning/surface preparation of gasket seating surfaces	
		Final inspection	
		Box-up of vessel	
		Removal of scaffolding	
		Housekeeping of area after job completion	
23	20-470	Low Temperature Separator	
		Erection of scaffolding	Vertical Vessel
		Isolation of vessel / blinding, if required	Size of Manway = 20"
		Dismantling of manway flanges	SIZE OF VESSEL :
		Ventilation / Safety clearance for confined space entry	ID = 1400 mm, Thickness = 28.6 mm
		Initial inspection of vessel and internals and repair, if required	Length (T/T)= 3870 mm
		Cleaning / flushing of complete vessel	VESSEL MEDIUM:
		Inspection / cleaning of strainers / Boot / NRVs of associated piping	
		Installation of cold insulation at manway covers	
		Cleaning/surface preparation of gasket seating surfaces	

		Final inspection	
		Box-up of vessel	
		Removal of scaffolding	
		Housekeeping of area after job completion	
24	20-471	De-Butanizer Reflux Drum	
		Erection of scaffolding	Horizontal Vessel
		Isolation of vessel / blinding, if required	Size of Manway = 20" x 300 Lbs. RF
		Dismantling of manway	SIZE OF VESSEL :
		Ventilation / Safety clearance for confined space entry	ID = 1372 mm, Thickness = 16 mm
		Initial inspection of vessel	Length (T/T)= 4750 mm
		Cleaning / flushing of complete vessel	VESSEL MEDIUM:
		Inspection / cleaning of Boot and associated piping	LPG
		Cleaning/surface preparation of gasket seating surfaces	
		Final inspection	
		Box-up of vessel	
		Removal of scaffolding	
		Housekeeping of area after job completion	
25	20-472	Warm Flare Knock Out Drum	
		Erection of scaffolding	Horizontal Vessel
		Isolation of vessel / blinding, if required	Size of Manway = 20" x 150 Lbs. RF
		Dismantling of manway flanges	SIZE OF VESSEL :
		Ventilation / Safety clearance for confined space entry	ID = 2000 mm, Thickness = 16 mm
		Initial inspection of vessel and internals and repair, if required	Length (T/T)= 6200 mm
		Cleaning / flushing of complete vessel	VESSEL MEDIUM:
		Cleaning of Level Glass	
		Inspection / cleaning of strainers / Boot / NRVs of associated piping	Natural Gas Condensate
		Cleaning/surface preparation of gasket seating surfaces	
		Final inspection	

		Box-up of vessel	
		Removal of scaffolding	
		Housekeeping of area after job completion	
26	20-473	Cold Flare Knock Out Drum	
		Erection of scaffolding	Horizontal Vessel
		Isolation of vessel / blinding, if required	Size of Manway = 20" x 150 Lbs. RF
		Dismantling of manway flanges	SIZE OF VESSEL :
		Ventilation / Safety clearance for confined space entry	ID = 1372 mm,
		Initial inspection of vessel and internals and repair, if required	Length (T/T)= 4060 mm
		Cleaning / flushing of complete vessel	VESSEL MEDIUM:
		Inspection / cleaning of associated piping	Natural Gas, LPG, Condensate
		Cleaning/surface preparation of gasket seating surfaces	
		Final inspection	
		Box-up of vessel	
		Removal of scaffolding	
		Housekeeping of area after job completion	
		HEAT EXCHANGERS (Shell & Tube):	
27	20-520	Feed Gas Chiller:	
		Removal of insulation from channel heads	TEMA Class R, Fixed Tube sheet
		Dismantling of Channel Heads and associated piping / valves	SHELL DETAILS:
		Initial Inspection of tube sheets and Channel Heads	Length (T/T) = 21'-2-5/8", OD = 14", No. of Pass = 01
		Internal cleaning of tubes by mechanical rodding / water jetting	
		Internal cleaning of channel heads	TUBE DETAILS:
		Cleaning/surface preparation of gasket seating surfaces	No. of Tubes = 114, No. of Pass = 02
		Pressure/leak testing if required	OD = 3/4" x 14 BWG (MW) x 18'-0" LENGTH
		Final Inspection	Tube Bundle Weight = 2,150 Lbs.
		Box up of Channel Heads and associated piping	

		Restoration of insulation of channel heads	
		Housekeeping of Area after job completion	
28	20-518	Regeneration Gas Heater	
		Removal of insulation from channel heads	TEMA Class R, Fixed Tube sheet
		Dismantling of Channel Heads and associated piping / valves	SHELL DETAILS:
		Initial Inspection of tube sheets and Channel Heads	Length (T/T) = 24'-0", OD = 16", No. of Pass = 01
		Internal cleaning of tubes by mechanical rodding & water jetting	
		Internal cleaning of channel heads	TUBE DETAILS:
		Cleaning/surface preparation of gasket seating surfaces	No. of Tubes = 163, No. of Pass = 01
		Pressure/leak testing if required	OD = 3/4" x 14 BWG (MW) x 20'-0" LENGTH
		Final Inspection	Tube Bundle Weight = 2,650 Lbs.
		Box up of Channel Heads and associated piping	
		Restoration of insulation of channel heads	
		Housekeeping of Area after job completion	
29	20-521	Condensate Stabilizer Reboiler	
		Removal of insulation from channel head	TEMA Class R, Removable Tube Bundle
		Dismantling of Channel Heads and associated piping / valves	SHELL DETAILS:
		Removal of Tube Bundle	
		Initial Inspection of shell internals & channel head	Length (T/T) = 34'-11-1/2", OD = 35-1/2", No. of Pass = 01
		Internal cleaning of channel head and shell	TUBE DETAILS:
		Internal cleaning of tubes by mechanical rodding & water jetting	No. of Tubes = 123, No. of Pass = 08
		External cleaning of tube bundle by water jetting	OD = 3/4" x 14 BWG (MW) x 9'-0" LENGTH
		Cleaning/surface preparation of gasket seating surfaces	Tube Bundle Weight = 2,000 Lbs.
		Pressure/leak testing if required	
		Final Inspection	
		Installation of Tube Bundle	

		Box up of channel head and associated piping	
		Restoration of insulation of channel head	
		Housekeeping of Area after job completion	
30	20-523 (A)	Stablizer Feed Bottom Heat Exchanger (03 no.)	
31	20-527 (B)	Removal of insulation from channel heads	TEMA Class R, Fixed Tube sheet
32	20-528 (C)	Dismantling of Channel Heads and associated piping / valves	SHELL DETAILS:
		Initial Inspection of tube sheets and Channel Heads	Length (T/T) = 21'-2-5/8", OD = 14", No. of Pass = 01
		Internal cleaning of tubes by mechanical rodding & water jetting	
		Internal cleaning of channel heads	TUBE DETAILS:
		Cleaning/surface preparation of gasket seating surfaces	No. of Tubes = 114, No. of Pass = 02
		Pressure/leak testing if required	OD = 3/4" x 14 BWG (MW) x 18'-0" LENGTH
		Final Inspection	Tube Bundle Weight = 2,150 Lbs.
		Box up of Channel Heads and associated piping	
		Restoration of insulation of channel heads	
		Housekeeping of Area after job completion	
33	20-524	De-Butanizer Reboiler	
		Removal of insulation from channel head	TEMA Class R, Removable Tube Bundle
		Dismantling of Channel Heads and associated piping / valves	SHELL DETAILS:
		Initial Inspection of shell internals & channel head	Length (T/T) = 30'-9", OD = 35", No. of Pass = 01
		Removal of Tube Bundle	
		Internal cleaning of channel head and shell	TUBE DETAILS:
		Internal cleaning of tubes by mechanical rodding & hydro jetting	No. of Tubes = 130, No. of Pass = 04
		External cleaning of tube bundle by hydro jetting	OD = 3/4" x 14 BWG (MW) x 18'-0" LENGTH
		Cleaning/surface preparation of gasket seating surfaces	Tube Bundle Weight = 3,550 Lbs.
		Pressure/leak testing if required	
		Final Inspection	

		Installation of Tube Bundle	
		Box up of channel head and associated piping	
		Restoration of insulation of channel head	
		Housekeeping of Area after job completion	
34	20-525 (A)	De-Butanizer Feed/Bottoms Exchanger (04 no.)	
35	20-529 (B)	Removal of insulation from channel heads	TEMA Class R, Fixed Tube sheet
36	20-530 (C)	Dismantling of Channel Heads and associated piping / valves	SHELL DETAILS:
37	20-531 (D)	Initial Inspection of tube sheets and Channel Heads	Length (T/T) = 19'-2-5/16", OD = 18", No. of Pass = 01
		Internal cleaning of tubes by mechanical rodding & water jetting	
		Internal cleaning of channel heads	TUBE DETAILS:
		Cleaning/surface preparation of gasket seating surfaces	No. of Tubes = 219, No. of Pass = 04
		Pressure/leak testing if required	OD = 3/4" x 14 BWG (MW) x 16'-0" LENGTH
		Final Inspection	Tube Bundle Weight = 2,650 Lbs.
		Box up of Channel Heads and associated piping	
		Restoration of insulation of channel heads	
		Housekeeping of Area after job completion	
38	20-526	De-Ethanizer Reboiler	
		Removal of insulation from channel head	TEMA Class R, Removable Tube Bundle
		Dismantling of Channel Heads and associated piping / valves	SHELL DETAILS:
		Initial Inspection of shell internals & channel head	Dia = 762 mm, Length (T/T) = 9450 mm No. of Pass = 01
		Removal of Tube Bundle	
		Internal cleaning of channel head and shell	TUBE DETAILS:
		Internal cleaning of tubes by mechanical rodding & water jetting	No. of Tubes = 130, No. of Pass = 04
		External cleaning of tube bundle by water jetting	OD = 3/4" x 14 BWG (MW) x 18'-0" LENGTH
		Cleaning/surface preparation of gasket seating surfaces	Tube Bundle Weight = 3,550 Lbs.

		Pressure/leak testing if required	
		Final Inspection	
		Installation of Tube Bundle	
		Box up of channel head and associated piping	
		Restoration of insulation of channel head	
		Housekeeping of Area after job completion	
		Heaters (Gas Fired):	
39	20-772	Hot Oil Heater	
		Electrical isolation	Horizontal Heater
		Dismantling of manway flange	Size of Manway = 20" x 150 Lbs. RF
		Ventilation / Safety clearance for confined space entry	SHELL DETAIL:
		Inspection of Blower and suction intake cleaning	OD=3454 mm
		Inspection of Burner and repair (welding of spokes and cracks etc.)	Length (T/T)= 10058 mm
		Servicing of fuel gas actuators of hot oil heater A	
		Dismantling of stack - hood for inspection and repair, if required	
		Internal Inspection of hot oil heater coil and repair, if required	
		Inspection of rock wool and fire clay and repair, if required	
		Final inspection	Shell Thickness = 8 mm
		Box-up of vessel	Coil Dia = 8"
		Housekeeping of area after job completion	
40	20-773	Hot Oil Heater	
		Electrical isolation	Horizontal Heater
		Dismantling of manway flange	Size of Manway = 20" x 150 Lbs. RF
		Ventilation / Safety clearance for confined space entry	SHELL DETAIL:
		Inspection of Blower and suction intake cleaning	OD=3454 mm
		Inspection of Burner and repair (welding of spokes and cracks etc.)	Length (T/T)= 10058 mm
		Servicing of fuel gas actuators of hot oil heater A	
		Dismantling of stack - hood for inspection and repair, if required	

		Internal Inspection of hot oil heater coil and repair, if required	
		Inspection of rock wool and fire clay and repair, if required	Shell Thickness = 8 mm
		Final inspection	Coil Dia = 8"
		Box-up of vessel	
		Housekeeping of area after job completion	
		MEMBRANE UNIT:	
41	20-774	Membrane Skid	
		Isolation of skid, if required	No of filter Elements:1240
		Dismantling of end cover flanges and membrane element removal	
		Internal inspection / cleaning of element housings	
		Inspection of the Elements and replacement if required	
		Box-up of vessel	
		Housekeeping of area after job completion	
		FILTERS:-	
42	20-323	Condensate Filter (02 no.)	
43	20-324	Dismantling of top cover flange of filter vessel	Vertical Vessel
		Initial inspection of filter vessel and internals	Top Entry: 14" MODCO
		Cleaning of filter housing	SIZE OF VESSEL :
		Replacement of filter elements	14" OD x 1.093" w/t SMLS Pipe
		Box-up of vessel	Length = 2324 mm
		Housekeeping of area after job completion	TYPE OF FILTER:
			Particle Filter
44	20-327	Condensate Filter Coalescer	
		Dismantling of cover of filter vessel	Horizontal Vessel
		Initial inspection of filter vessel and internals	Head Type:Ellipsodial & Modco Closure Assembly 22"
		Cleaning of filter housing	SIZE OF VESSEL :
		Replacement of filter elements	22" OD x 1.375" w/t SMLS Pipe
		Final inspection	Length = 2200mm

		Box-up of vessel	TYPE OF FILTER:
		Housekeeping of area after job completion	Coalescer Filter
			Medium: Condensate
45	20-329	Gas Filter Separator	
		Dismantling of top cover of filter vessel	Vertical Vessel
		Initial inspection of filter vessel and internals	SIZE OF VESSEL :
		Cleaning of filter housing	Dia = 356 mm, Length = 2997 mm
		Replacement of filter elements	TYPE OF FILTER:
		Final inspection	Coalescer Filter
		Box-up of vessel	Shell Thickness: 18.61mm
		Housekeeping of area after job completion	Medium: Process gas
			Connection size:8"
46	20-332	Dust Filter	
		Dismantling of top cover flange of filter vessel	Horizontal Vessel
		Initial inspection of filter vessel and internals	Modco Closure Assembly ,Outlet: 8"
		Cleaning of filter housing	SIZE OF VESSEL :
		Replacement of filter elements	I.D = 610 mm, Length = 1930mm, Thickness :39.29mm
		Final inspection	TYPE OF FILTER:
		Box-up of vessel	Particle Filter
		Housekeeping of area after job completion	Inlet/Outlet connection siz:8"
47	20-338	High Pressure Gas Filter	
		Dismantling of side cover of filter vessel	Horizontal Vessel
		Initial inspection of filter vessel and internals	SIZE OF VESSEL :
		Cleaning of filter housing	OD= 457mm , L = 3000mm
		Replacement of filter elements	TYPE OF FILTER:
		Final inspection	Coalescer Filter
		Box-up of vessel	
		Housekeeping of area after job completion	

48	20-339	Medium Pressure Gas Filter	
		Erection of scaffolding	Vertical Vessel
		Isolation of vessel / blinding, if required	Head Type:Ellipsodial (Bottom Dish)
		Dismantling of top cover flange of filter vessel	Top Flange Size: 24"X600 LBS
		Initial inspection of filter vessel and internals	SIZE OF VESSEL :
		Cleaning of filter housing	OD= 610mm,L=1845mm
		Replacement of filter elements	TYPE OF FILTER:
		Cleaning/surface preparation of gasket seating surfaces	Coalescer Filter (03 Nos.)
		Final inspection	Shell Thickness: 30mm
		Box-up of vessel	Medium: Natural gas
		Removal of scaffolding	
		Housekeeping of area after job completion	
49	20-342	Fuel Gas Filter Separator	
		Isolation of vessel / blinding, if required	Vertical Vessel
		Dismantling of top cover flange of filter vessel	SIZE OF VESSEL :
		Initial inspection of filter vessel and internals	(I.Dx L) 548 mm x 2010mm S/S
		Cleaning of filter housing	Shell Thickness: 10mm
		Replacement of filter elements	TYPE OF FILTER:
		Cleaning/surface preparation of gasket seating surfaces	Dust Filter
		Final inspection	Head Type:Ellipsodial (Bottom Dish)
		Box-up of vessel	Inlet/Outlet connection size: 4"x 150 LBS
		Housekeeping of area after job completion	
50	20-405	Particle Filter at upstream of Membrane Skid	
		Erection of scaffolding	Vertical Vessel
		Dismantling of top cover flange and nozzle flange of filter vessel	Head Type:Flate (Bottom dish)
		Initial inspection of filter vessel and internals	SIZE OF VESSEL :
		Cleaning of filter housing	(I.Dx L) 548 mm x 2250 mm S/S
		Dismantling of old filters & installation of new filter elements if required	TYPE OF FILTER:

		Cleaning/surface preparation of gasket seating surfaces	Particle Filter
		Final inspection	Shell Thickness:30mm
		Box-up of vessel	Medium: Natural gas
		Removal of scaffolding	
		Housekeeping of area after job completion	
51	20-598	Coalescer Filter at Membrane Skid	
		Isolation of vessel / blinding, if required	Vertical Vessel
		Dismantling of top cover flange and nozzle flange of filter vessel	Head Type:Ellipsodia (Bottom dish)
		Initial inspection of filter vessel and internals	SIZE OF VESSEL :
		Cleaning of filter housing	Dia: 1371.6mm
		Dismantling of old filters & installation of new filter elements if required	TYPE OF FILTER:
		Cleaning/surface preparation of gasket seating surfaces	Coalescer Filter (51 Nos.)
		Final inspection	Shell Thickness:41.27mm
		Box-up of vessel	Medium: Natural gas
		Housekeeping of area after job completion	
52	20-599	Particle Filter at upstream of Membrane Skid	
		Erection of scaffolding	Vertical Vessel
		Dismantling of top cover flange and nozzle flange of filter vessel	Head Type:Flate (Bottom dish)
		Initial inspection of filter vessel and internals	SIZE OF VESSEL :
		Cleaning of filter housing	(I.Dx L) 548 mm x 2250 mm S/S
		Dismantling of old filters & installation of new filter elements if required	TYPE OF FILTER:
		Cleaning/surface preparation of gasket seating surfaces	Particle Filter
		Final inspection	Shell Thickness:30mm
		Box-up of vessel	Medium: Natural gas
		Removal of scaffolding	
		Housekeeping of area after job completion	

53	20-600	Fuel Gas Filters of Feed Gas Compressors (03 N.)	
54	20-603	Dismantling of top cover flange and nozzle flange of filter vessel	
55	20-604	Initial inspection of filter vessel and internals	
		Cleaning of filter housing	
		Dismantling of old filter & installation of new filter element if required	
		Cleaning/surface preparation of gasket seating surfaces	
		Final inspection	
		Box-up of vessel	
		Housekeeping of area after job completion	
56	20-606	Fuel Gas Filters of Sale Gas Compressors (03 N.)	
57	20-607	Dismantling of top cover flange and nozzle flange of filter vessel	
58	20-608	Initial inspection of filter vessel and internals	
		Cleaning of filter housing	
		Dismantling of old filter & installation of new filter element if required	
		Cleaning/surface preparation of gasket seating surfaces	
		Final inspection	
		Box-up of vessel	
		Housekeeping of area after job completion	
59	20-474	Hot Oil Duplex Filter (02 no.)	
60	20-475	Isolation of vessel / blinding, if required	Vertical Vessel
		Dismantling of top cover flange of filter vessel	SIZE OF VESSEL :
		Internal inspection and cleaning of filter vessel	Length = 2324 mm
		Cleaning if bucket strainer	TYPE OF FILTER:
		Cleaning/surface preparation of O-Ring	wire mesh strainer
		Final inspection	Filter size:

		Box-up of vessel	Dia= 290mm,L=750mm
		Housekeeping of area after job completion	
		FIN FAN COOLERS:	
61	20-564	Regeneration Gas Cooler & Stabiliser Compressor Discharge Cooler	
62	20-565	Errction of Scaffolding	Unit Size: 5142 x 1553 x 1069 mm
		Isolation and blinding, if required	TUBE DETAILS:
		Inspection of fin fan DE/NDE bearings and replacement if required	No. of Tubes (Finned) = 129, No. of Pass = 06,
		Greasing of fin fan bearings	Tubes per Pass: 21,22,21,22,21,22
		Alignment of motor and fin fan pulleys and tightening of bolts.	Nos. of Tube Plugs: 258
		Inspection of fin fan belts and readjustment if required	
		Removal of tube plugs for internal inspection / cleaning	
		Internal cleaning of tubes by mechanical rodding & hydro jetting	
		External cleaning of tube bundle by water flushing and detergent	
		Reinstallation of the tube plugs	
		Pressure / leak testing if required	
		Pitch adjustment of fan blade	
		Removal of scaffolding	
		Housekeeping of Area after job completion	
63	20-568	De-Butaniser Condenser	
64	20-569	Errction of Scaffolding	Unit Size: 5142 x 1553 x 1069 mm
		Isolation and blinding, if required	TUBE DETAILS:
		Inspection of fin fan DE/NDE bearings and replacement if required	No. of Tubes (Finned) = 129, No. of Pass = 06,
		Greasing of fin fan bearings	

		Alignment of motor and fin fan pulleys and tightening of bolts.	
		Inspection of fin fan belts and readjustment if required	Tubes per Pass: 21,22,21,22,21,22
		Removal of tube plugs for internal inspection / cleaning	Nos. of Tube Plugs: 258
		Internal cleaning of tubes by mechanical rodding & hydro jetting	
		External cleaning of tube bundle by water flushing and detergent	
		Reinstallation of the tube plugs	
		Pressure / leak testing if required	
		Pitch adjustment of fan blade	
		Removal of scaffolding	
		Housekeeping of Area after job completion	
65	20-571	De-Butaniser Bottom Rundown Cooler	
66	20-572	Errrection of Scaffolding	Unit Size: 5142 x 1553 x 1069 mm
		Isolation and blinding, if required	TUBE DETAILS:
		Inspection of fin fan DE/NDE bearings and replacement if required	No. of Tubes (Finned) = 129, No. of Pass = 06,
		Greasing of fin fan bearings	Tubes per Pass: 21,22,21,22,21,22
		Alignment of motor and fin fan pulleys and tightening of bolts.	Nos. of Tube Plugs: 258
		Inspection of fin fan belts and readjustment if required	
		Removal of tube plugs for internal inspection / cleaning	
		Internal cleaning of tubes by mechanical rodding & hydro jetting	
		External cleaning of tube bundle by water flushing and detergent	
		Reinstallation of the tube plugs	
		Pressure / leak testing if required	
		Pitch adjustment of fan blade	
		Removal of scaffolding	
		Housekeeping of Area after job completion	
67	20-573	Sale Gas Cooler of Membrane	
		Errrection of Scaffolding	TYPE:2FPVA

		Isolation and blinding, if required	Unit Size: 2896 x 9144 mm
		Inspection of fin fan DE/NDE bearings and replacement if required	TUBE DETAILS:
		Greasing of fin fan bearings	Type: Forced
		Alignment of motor and fin fan pulleys and tightening of bolts.	Bare Tube:1728 ft2,Surface area .Finned Tube :36631 ft2
		Inspection of fin fan belts and readjustment if required	No of bays: ONE
		Removal of tube plugs for internal inspection / cleaning	
		Internal cleaning of tubes by mechanical rodding & hydro jetting	
		External cleaning of tube bundle by water flushing and detergent	
		Reinstallation of the tube plugs	
		Pressure / leak testing if required	
		Pitch adjustment of fan blade	
		Removal of scaffolding	
		Housekeeping of Area after job completion	
68	20-574	Sale Gas Compressor Coolers (03 no.)	
69	20-575	Errection of Scaffolding	Unit Size: 13445 x 4450 x 3400
70	20-577	Isolation and blinding, if required	
		Inspection of fin fan DE/NDE bearings and replacement if required	
		Greasing of fin fan bearings	
		Alignment of motor and fin fan pulleys and tightening of bolts.	
		Inspection of fin fan belts and readjustment if required	
		Removal of tube plugs for internal inspection / cleaning	
		Internal cleaning of tubes by mechanical rodding & hydro jetting	
		External cleaning of tube bundle by water flushing and detergent	
		Reinstallation of the tube plugs	
		Pressure / leak testing if required	
		Pitch adjustment of fan blade	

		Removal of scaffolding	
		Housekeeping of Area after job completion	
71	20-578	Feed Gas Compressor Cooler (03 no.)	
72	20-579	Errection of Scaffolding	
73	20-580	Isolation and blinding, if required	Unit Size: 13445 x 4450 x 3400
		Inspection of fin fan DE/NDE bearings and replacement if required	
		Greasing of fin fan bearings	
		Alignment of motor and fin fan pulleys and tightening of bolts.	
		Inspection of fin fan belts and readjustment if required	
		Removal of tube plugs for internal inspection / cleaning	
		Internal cleaning of tubes by mechanical rodding & hydro jetting	
		External cleaning of tube bundle by water flushing and detergent	
		Reinstallation of the tube plugs	
		Pressure / leak testing if required	
		Pitch adjustment of fan blade	
		Removal of scaffolding	
		Housekeeping of Area after job completion	
74	20-588	Turbo-Expander Oil Cooler	
		Isolation and blinding, if required	
		Removal of tube bundle	
		Installation of new bundle	
		Pressure / leak testing if required	
		Housekeeping of Area after job completion	
75	20-589	Oil Coolers of Instrument Air Compressors (02 no.)	
		Isolation and blinding, if required	

		External cleaning of tube bundle by water flushing and detergent	
		Pressure / leak testing if required	
		Housekeeping of Area after job completion	
76	20-591	After-coolers of Instrument Air Compressors (02 no.)	
		Isolation and blinding, if required	
		External cleaning of tube bundle by water flushing and detergent	
		Housekeeping of Area after job completion	
77	20-592	Coolers (Table Type) of Jenbacher Gas Engine (02 no.)	
		Electrical Isolation	
		External cleaning of tube bundle by water flushing and detergent	
		Housekeeping of Area after job completion	
78	20-595	Radiators (Jacket Water & Auxiliary Water) of Caterpillar Engines (06)	
		Isolation and blinding, if required	
		External cleaning of tube bundle by water flushing and detergent	
		Housekeeping of Area after job completion	
		Valves: (Dismantling, Reinstallation and Repairing if required):	
79	20-441	HD#02 to LP header connecting valve (leakage at both flanges).	
80	20-442	Jakro separator to LP HEADER (valve to be installed).	
81	20-443	Lala Jamali to MP header valve (leakage at both flanges)	
82	20-445	Lala Jamali to LP header valve (leakage at both flanges)	
83	20-447	Check 2-1 for LP header (both flanges leakage and Passing).	
84	20-436	Check 63-4 to LP header (leakage from both flanges)	
85	20-350	By-Pass valve of condensate LCV-2004-2, of test separator (Passing/ glands leakage)	

86	20-421	2003-PCV-02 at LP separator for flaring (upstream isolating valve is passing)	
87	20-423	2003-PCV-02 at LP separator for flaring (downstream isolating valve is passing)	
88	20-336	MP separator vessel bottom drain valve	
89	20-394	Jakhro separator PSV by Pass Valve (replace to globe valve)	
90	20-337	K-2601 Discharge Valve at upstream of discharge PG. (Passing problem)	
91	20-348	Downstream valve of K-2601 Suction scrubber LV leading to closed drain (passing)	
92	20-420	upstream and downstream isolating valves of Particle filters T-2741 (passing problem.)	
93	20-418	upstream isolating valve of PCV-2745 (stuck problem).	
94	20-419	Downstream isolating valve of PCV-2745 (passing problem).	
95	20-351	upstream isolating valves of LCV-2711. (Passing problem)	
96	20-353	Downstream isolating valves of LCV-2711. (Passing problem)	
97	20-358	Particle filter (T-2741) to fuel gas heater (EP-5201) valve to be installed.	
98	20-362	Drain valve of particle filter seat passing problem. (T-2901)	
99	20-377	Suction valve of GZ-3041/A.	
100	20-451	Suction valve of GZ-3041/B.	
101	20-379	discharge valve of GZ-3041/A.	
102	20-374	discharge valve of GZ-3041/B.	
103	20-380	Priming valve for GZ-3041-A/B.	
104	20-414	Isolating valve of PV-3026/A	
105	20-416	Isolating valve of PV-3026/A	
106	20-383	Area-2 by pass line to sale gas ; valve near PT-2906. (stem leakage problem).	
107	20-385	Area-2 by pass line to sale gas ; valve near PT-2906. (passing problem).	

108	20-453	SDV-7101/C is to be installed instead of manual valve.	
109	20-391	SDV-7103/C is to be installed instead of manual valve.	
110	20-392	SDV-7109/C valve body stuck problem to be rectified.	
111	20-360	replacement of isolating valves of LG of stabilizer compressor suction scrubber (CZ-2621)	
112	20-407	Closed drain valve of De-ethanizer needs replacement because of its passing problem.	
113	20-408	drain valve of feed inlet line of EZ-3021.	
114	20-425	Glands leakage to be attended at both main discharge valves of hot oil.	
115	20-427	glands leakage at downstream valves of FV-6012/6022.	
116	20-454	Glands leakage at isolating valve of PI-3004 at de-ethanizer hot oil return line.	
117	20-428	Valve flange leakage to be rectified at hot oil inlet line valve of De-butnizer reboiler. (adjacent to NRV)	
118	20-411	Rectification of passing problem of at HP filter discharge valve.	
119	20-434	Rectification of MP header valve from Test Separator (Stuck valve)	
120	20-433	Rectification of seat passing problem at Valve, upstream of gas filter separator.	
121	20-435	Jakhro well line inlet valve passing problem to be rectified.	
122	20-432	Rectification of LP header to test separator valve. (stuck valve)	
123	20-431	Suction valves of feed gas compressor. (Passing Problem)	
124	20-382	Rectification of feed gas compressor manual recycle valves. (Passing problem)	
125	20-430	rectification of isolating valves of SDV-5201 (stuck valve).	
126	20-429	rectification of downstream of PV-5204	
127	20-402	Rectification of discharge valves of LPG dispatch line. (wheel stuck problem)	
128	20-404	Rectification of valve passing problem of LPG Dispatch pump G-7101-A suction valve	

		Strainers:	
		Dismantling Box up and Inspection cleaning of strainers / screens as per below mentioned list:	
129	20-476	Inspection and cleaning of suction strainer of Feed Gas Compressors V-2001/02/03	
130	20-477	Inspection and cleaning of suction strainer of Sale Gas Compressor V-2910 /11/12	
131	20-478	Inspection and cleaning of inlet strainer at De-Ethanizer Compressor K-3001	
132	20-480	Inspection and cleaning of inlet strainer at Stabilizer Compressor K-2601	
133	20-481	Inspection and cleaning of inlet strainer at De-Ethanizer Compressor K-2721 A/B	
134	20-482	Inspection of inlet screens (02 no.) of Turbo-Expander & Re-compressor K-2801	
135	20-483	Inspection and cleaning of suction strainer of Pump GZ-3041 A /B	
136	20-484	Inspection and cleaning of suction strainer of Hot Oil Circulation Pump GZ- 6031 A/B/C (03 No.)	
137	20-485	Inspection and cleaning of suction strainer LPG Loading Pump G-7101-A/B/C	
138	20-486	Inspection and cleaning of suction strainer of Fire Water Pump (GZ-5121-A/B)	
139	20-487	Inspection and cleaning of suction strainer of Warm Flare Condensate Pumps (GZ-6211-A/B)	
140	20-488	Inspection and cleaning of suction strainer of LPG Injection Pump (G-3301)	
141	20-489	Inspection and cleaning of suction strainer of LPG Return Pump (G-7102)	
142	20-490	Inspection and cleaning of suction strainer of Closed Drain Pump (G-5501)	
143	20-506	Inspection and cleaning of suction strainer of Fire Water Jockey Pumps (GZ-5111A/B)	
144	20-507	Inspection and cleaning of suction strainer of Condensate Loading Pumps (GZ-7221 A/B/C)	
145	20-508	Inspection and cleaning of suction strainer of Produced Water Stock Tank Pump (GZ-2005)	
146	20-509	Inspection and cleaning of suction strainer of Condensate	

		Stock Tanks Pump (GZ-2004)	
147	20-510	Inspection and cleaning of suction strainer of Water Reservoir Pumps (GZ-8802 A/B)	
148	20-511	Inspection and cleaning of suction strainer of Diesel Distribution And Filling Pumps (GZ-5000 A/B)	
149	20-512	Fuel Gas Strainer of Power House Engines (V-8001 A/B/C/D)	
150	20-513	Inspection and cleaning of 04 no Screens of Gas - Gas Exchanger	
151	20-775	Cleaning of CPI Pit:	
		Isolation of vessel / blinding,	
		Opening of manways	
		Ventilation / Safety clearance for confined space entry	
		Removal of dead stock water / oil	
		Removal of settled sludge	
		Dismantling of CPI	
		Cleaning of the CPI	
		Inspection of the pit internals and repair, if required	
		Box-up of CPI	
		Final Inspection	
		Deblinding	
		Housekeeping of area after job completion	
152	20-776	Replacement of Hot Oi Heater Coil:	Horizontal Heater
		Isolation of the heater / blinding,	Size of Manway = 20" x 150 Lbs. RF
		Removal of the blower assembly	SHELL DETAIL:
		Cutting of the side walls of shell	OD=3454 mm
		Arrangement for the removal of hellical coil	Length (T/T)= 10058 mm
		Removal of the hellical coil	
		Insertion of new hellical coil	
		Welding of side walla	

		Box up	
		Housekeeping of area after job completion	Shell Thickness = 8 mm
			Coil Dia = 8"
		Modification Jobs:	
153	20-754	Rectification of closed drain line (6") leakge.	
154	20-755	Installation of valve at membrane sales gas line near membrane skid for maintaining SSGC sale gas specification.	
155	20-756	Provision of recyle gas for compressor K-3001 from sales gas cooler down stream.	
156	20-757	Installation of block valve and Specticle Blind in HP line for manifold isolation.	
157	20-758	Installation of Specticle Blind in MP line for manifold isolation.	
158	20-759	Installation of Specticle Blind in LP line for manifold isolation.	
159	20-761	Installation of block valve and Specticle Blind in test separator line for manifold isolation.	
160	20-779	Structural Repairs:	
		Regen gas cooler EM-2701 louvers lockers welding	
		Rectification of platform of LP Separator	
		Welding of louvers lockers of Regeneration Gas Cooler EM-2701	
		Propane Pump foundation repair at Skid V-6501	
		Repairing of louver of Sale Gas Compressor V-2911	
		Modification of support at Bitrism	
161	20-778	Insulation Jobs:	
		Complete insulation of De-ethanizer column	
		Insulation of remaining piping in Area 2.	
		Reinstallation of the piping insulation removed for NDT jobs	
162	20-777	Paint Jobs:	
		Pain of De-ethanizer column	
		Paint of LPG Bullets	
		Paint of membrane area piping	

		Paint of particle filters T-2741, T-2901 & HP Gas Filter T-2001	
163	20-1291	Fabrication & Installation of Bypass Line of Mercury Guard Bed (additionally scope verbally infirmed by I/C Process)Note: Detailed BOQ and Isometrics will be shared by I/C Process by 29-02-2020 so that timely material procurement can be planned by Mechanical Section.	