

DETAILED BILL OF QUANTITIES (BOQ)

Repair, Commissioning of Industrial/Hospital Laundry Washing Machine		
Sr.	Description	Qty
01	Supply, installation, testing and commissioning of 15 kW Variable Frequency Drive (VFD), heavy-duty industrial grade, suitable for continuous hospital laundry operation, including harmonic mitigation, overload protection, braking control, parameterization, cable terminations, and integration with existing motor and control logic.	03
02	Supply, installation, testing and commissioning of 10 kW Variable Frequency Drive (VFD), industrial grade, complete with ramp control, torque control, fault diagnostics, electrical protection, and synchronization with wash cycle logic.	03
03	Design, supply, programming and commissioning of PLC-based control system with HMI interface, including development of wash programs, safety interlocks, alarm handling, cycle optimization, operator interface screens, and integration with all field devices.	03
04	Supply and installation of industrial shaft angle encoder for drum position feedback, including mechanical coupling, calibration, signal conditioning, and PLC integration.	03
05	Supply and installation of industrial level sensor for precise water level monitoring, including mounting, wiring, calibration, and PLC logic configuration	03
06	Supply and installation of solenoid-operated door locking mechanism with electrical and mechanical interlocks to ensure operator safety during machine operation	03
07	Supply and installation of air pressure cylinder for brake system, including mounting brackets, pneumatic tubing, pressure regulation, and functional testing to ensure controlled drum deceleration	03
08	Electrical panel modification, rewiring, gland sealing, labeling, earthing, and testing including compliance with hospital safety standards.	03
09	Supply and installation of industrial steam control valve, suitable for laundry process temperatures and pressures, including actuator, insulation, fittings, and operational testing.	03
10	Supply and installation of electrically actuated water inlet valves (2 Nos.), including piping connections, filtration, solenoid control wiring, and leak testing.	03
11	Supply and installation of electrically actuated water outlet/drain valve (1 No.), including corrosion-resistant fittings and integration with PLC drain cycles.	03
12	Supply and installation of detergent dosing buckets complete with electrically operated control valves, including sequencing logic, chemical compatibility assurance, and	03

	operator calibration.	
13	Installation and alignment of clutch system, including mechanical coupling, load testing, and smooth engagement/disengagement verification.	03
14	Repairing and overhauling of electric drive motors, including dismantling, inspection, bearing replacement, rewinding (if required), dynamic balancing, and performance testing.	03
15	Supply and replacement of heavy-duty industrial bearings, including proper lubrication, alignment, and vibration checks.	03
16	Supply and installation of industrial-grade drive belts, including tensioning, alignment, and operational testing.	03
17	Repairing/replacement of drum cross assembly, including structural integrity checks, welding/machining (if required), and load testing	03
18	Comprehensive mechanical repairing works, including shaft alignment, vibration reduction, noise control, fastening, and operational optimization	03
19	Mechanical installation labor including dismantling, reassembly, alignment, and fastening.	03
20	Electrical installation labor including wiring, termination, PLC programming, VFD configuration, and HMI development	03
21	Testing, calibration, dry run, wet run, safety verification, and final commissioning under actual load conditions	03
22	Operator training and handover documentation including operating procedures and maintenance guidelines.	03

Repair and Commissioning of Industrial/Hospital Laundry Dryer

Sr.	Description	Qty
01	Supply, installation, testing and commissioning of industrial grade Variable Frequency Drive (VFD) suitable for dryer drum motor, designed for continuous operation, including soft start/soft stop control, torque regulation, dynamic braking, overload and thermal protection, harmonic mitigation, parameter configuration, electrical terminations, and full integration with dryer control logic.	03
02	Design, supply, programming and commissioning of PLC-based control system with HMI interface, including development of drying programs, temperature control logic, drum rotation sequencing, cool down cycle management, safety interlocks, fault diagnostics, alarm handling, emergency shutdown logic, and operator-friendly graphical interface.	03




03	Supply and installation of industrial temperature sensing devices for inlet and exhaust air temperature monitoring, including proper mounting, shielded wiring, signal conditioning, calibration, and PLC integration for precise thermal control.	03
04	Modification and upgrading of electrical control panel, including replacement/installation of MCBs, contactors, overload relays, control transformers, wiring, ferruling, labeling, earthing, insulation resistance testing, and compliance with hospital electrical safety requirements.	03
05	Supply and installation of industrial steam control valve or gas solenoid valve (as applicable) complete with actuator, fittings, strainers, insulation, pressure testing, and operational verification in coordination with dryer heating cycle.	03
06	Overhauling, cleaning and efficiency optimization of heat exchanger / steam coil including leak testing, combustion or heat transfer optimization, and performance validation under load conditions.	03
07	Supply, repair and installation of circulation and exhaust blower motors, including shaft alignment, bearing inspection, vibration analysis, airflow measurement, and balancing to ensure uniform drying.	03
08	Repairing, sealing and reinforcement of air ducts, lint filters, exhaust pathways, including removal of obstructions, air leakage prevention, and ensuring efficient airflow and compliance with fire safety standards.	03
09	Installation and calibration of safety thermostats, over-temperature protection devices and interlocks to ensure safe and reliable dryer operation.	03
10	Repairing, inspection and alignment of dryer drum assembly, including checking for cracks, deformation, corrosion, and ensuring smooth rotation under full load conditions	03
11	Supply and replacement of heavy-duty industrial bearings for drum and blower assemblies, including proper lubrication, alignment, and post-installation vibration checks.	03
12	Supply and installation of industrial-grade drive belts or chain drive system, including correct sizing, tensioning, alignment, and operational testing	03
13	Repairing or replacement of drum support rollers, shafts, couplings, including machining, welding (if required), dynamic balancing, and load testing	03
14	Comprehensive mechanical repair works including tightening of fasteners, structural reinforcement, vibration and noise reduction, mechanical stability improvement, and performance optimization.	03

15	Supply and installation of door safety limit switches and interlock mechanisms to prevent dryer operation when access doors are open.	03
16	Installation and testing of emergency stop switches, safety relays, and fail-safe circuits	03
17	Testing, verification and certification of all safety systems in accordance with hospital safety protocols and PEC guidelines.	03
18	Mechanical installation Expert Workers including dismantling, repair, reassembly, alignment, and fastening of all dryer components	03
19	Electrical installation Expert Workers including wiring, terminations, PLC programming, VFD configuration, HMI development, and control panel integration	03
20	Testing, calibration and commissioning including dry run, hot run, airflow verification, temperature uniformity testing, safety checks, and final commissioning under actual operating conditions.	03
21	Operator training and handover documentation including operating procedures, safety instructions, troubleshooting guidelines, and preventive maintenance schedules	03

Repair and Commissioning of Industrial/Hospital Air Compressor

Sr.	Description	Qty
1	Supply, installation, and testing of a 700-liter, 150 PSI air compressor block and pressure vessel for the laundry system, including a technical evaluation to either completely overhaul the existing compressor pump or replace it entirely with a brand-new unit.	01
2	Complete mechanical and electrical overhauling of the compressor's drive motor, specifically comprising full stator rewinding, replacement of all motor bearings, and comprehensive load testing to restore nominal operating efficiency.	01
3	Supply, integration, and calibration of the compressor's control network, including the installation of a main electrical safety switch, an automated air pressure control switch, and a physical safety relief valve for system overpressure protection.	01


Engr. Mazhar Khan
DD Mechanical
(Co-Member)


Engr. Numan Qabool
Sr. Manager Maintenance
Member

Technical Evaluation For Laundry

MANDATORY	01)	Registration Certificate For NTN & KPRA.	
	02)	Active Status on ATL for NTN & KPRA	
	03)	Last 01 03 year bank statement <i>Maintenance certificate</i>	
	04)	Last Year Income Tax Return	
	05)	Registration With Pakistan Engineering Council EE11,ME06,ME07,EE04,EE10	
	06)	Affidavit on stamp Paper duly attested mentioning following statements, (a) 2% CDR is attached with financial bid. (b) The firm is Not Black listed (C) Non-shareholder certificate (that no employee of MTI ATH Abbottabad is shareholder in the Firm's Business. (D) The Supplied item will be provided as per bidding document & all relevant documents would be provided at a time of delivery.	
	07)	One year warranty is Mandatory.	
	08)	Certificate of 100% compliance with purchaser's specification shall be provided on Firm/ Company Letter Head.	

Sr. No	Parameters	Detail/Supporting Documents	Max. Marks	Remarks
1	Additional Feature in Term of Hardware enhanced Specification	Additional Special Feature not mentioned by the purchaser. (Max 8 Marks depending upon the utility of additional feature offered)	7	
2	Physical Resources	List of relevant Qualified/(Engineers, Diploma Holders, welders Etc)(Engineer=1,diploma=0.5,Welder=0.5)	7	Details with supporting Documents must be attached.
		List of relevant specialized tools to be used for the job i.e Crane,lifter,welding machine,NDT Test equipment,Hydro Testing Equipment. X-ray Floresces	7	
		Availibility of Technical Support 24/7 for 1 year certificate	7	
		OFFICE IN THE PREMISES UNDER 300KM <i>radius</i>	7	
3	Past performance of last five years	01 marks per work order. Maximum 05 marks (only attach valid work orders reflecting to aseptic use for food grade and medical grade.relevant to General fabrication	5	Institution include Govt, Semi Govt, Autonomous Bodies & Private Entities.
4	Spare Part List & avialibility of per Years	Spare Part List with Availibility. Total Marks 5(one mark per year)	5	

Signature

Signature

5	Warranty	01- 06 months beyond asked warranty	3	5	
		02-01 Year beyond asked Warranty	4		
		03- 02 Year Beyond Asked Warranty	5		

Procurement Procedure of Single stage two envelopewill be adopted for tendering.

In technical Evaluation 70% (35/50) marks will be passing marks.

- Lowest priced among technically qualified bids will be accepted.

Engr. Mazhar Khan
DD Mechanical
(Co-Member)

Mr. Altaf Ur Rehman
Director Finance
Member

Engr. Numan Qabool
Sr. Manager Maintenance
Member

Mr. Parvaiz
Litigation Officer
Member

Mr. Asghar Khan Wazeer
Sr. Manager MM
Chairperson

TERMS & CONDITION FOR DAMAGED LAUNDRY MACHINE & DRYER

1. The firm must be registered with Pakistan Engineering Council as described in Evaluation Criteria.
2. 2% CDR of total amount must be attached with financial bid where as with Technical Bid there should be an affidavit affirming that CDR original is attached with financial bid. This CDR of 2% will be retained in case of successful bidder & will be considered as performance guarantee under KPPRA Rule. 20(4)
3. Income tax registration, all previous income tax must be attached with the bid & must be active with active on ATL including last year income tax return.
4. Sales tax registration must be included.
5. Last two/three year sales tax must be included.
6. Cutting/ Overwriting & condition tenders will not be considered.
7. Firm must not be involved in any litigation with any Govt. Agency/ Department.
8. A stamp paper must be attached along with the bid stating that firm is not black listed & not involved in litigation against in any department.
9. Bank statement of the contractor for the last three years must be attached with bid.
10. Sub-letting of the contractor to other contractor is not allowed.
11. Any false information if given in a bid will lead termination of contract and all deposited fee will be forfeited.
12. Technical staff & skill labor must be present at campus of the institute along with the necessary material for execution of work on emergency bases after signing the agreement.
13. The firm must be registered with KPPRA.
14. Hand written quoted priced in financial statement are not accepted.
15. The tender will be single stage and double envelope as per KPPRA rule.
16. The tender will be opened as per advertisement opening time.
17. In case of increase in quantity of Original BOQ, approval must be taken from competent authority before.



18. Safety of company employee from injuries during execution will be at contractor risk and cost.
19. In-complete tenders/ bids will be rejected.
20. Contractor will work under the supervision of SM maintenance & DDM.
21. All material/ equipment will be checked and approved by the allocated committee assigned by the Competent Authority.
22. Tax will be conducted and deducted as per Government of Pakistan rule.
23. Bill should clearly indicate the NTN/GST number.
24. Partial payment will be after successful completion of 50 % work on submittal of bill after endorsing of committee.
25. Full and final payment will be after successful completion of work on submittal of bills & after endorsing from DDM & SMM as well as assigned committee.
26. All material supply, erection & commissioning are at the contractor end while after verification of concerned engineer.
27. Labor charges, transportation, lifting for all purposes of the contractor, contractor is responsible.
28. In case any equipment or part is required to be removed from the system for repair/replacement or modification the contractor must obtain prior approval in writing from the boiler engineer or his nominated representative explaining reason for such requirement.
29. The contractor shall be bound to provide to their staff at site their own risk and cost all the related testing equipment kits, material descaling sets and effective descaling material welding sets, high vacuum testing sets, gas charging plants all kind of gases. i.e. Oxygen/ acetylene, nitrogen to expedite the operation servicing reasons for such requirement.
30. It shall be the sole responsibility of the contractor without any financial claim to keep all the indicating devices, instruments control, safety devices (electronics, electrical, mechanical hydraulic & pneumatic employed on various equipment & system perfectly.
31. All the replacement/ repairs and rectification of the defects and malfunctioning of the equipment must be attached in time.



32. The bidder must inspect the site before quoting the rates. ATH has the right to reject any bid with unrealistic rates or unworkable rate without assigning any reasons.
33. The bidder must furnish along with bid the breakable of their quotes as under. If the breakup is not mentioned the bid shall be considered as incomplete.
34. The contractor will be the responsible after erection & commissioning project by committee under the presence of SMM or DDM.
35. The contractor shall ensure that their site staff strictly maintain discipline at the ATH premises & strictly comply with the instructor issue from time to time by boiler engineer or his nominated representative the defaulter shall be penalized Rs. 5000 for each case.
36. During the witness above in clause 35, the financial express will be charge by vendor who would be working in the project.
37. After commissioning of ^{condy machines} incinerator the contractor is responsible for any material failure as per technical evaluation criteria.
38. Contractor will be responsible for its fully installation. For expert opinion for major modification, the contractor by himself will be responsible. More over if contractor failed to do the complete Job, he will be blacklisted, material will be forfeit and no payment will be done. Turn Key Bases.
39. A company whose performance is not satisfactory s not eligible.

