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(Foreign Supplies)



**GOVERNMENT OF PAKISTAN
PAKISTAN ORDNANCE FACTORIES
TENDER ENQUIRY**

Dear Sir,

Reference: T.E # **Wah-1800-12-ADN-D.O(JBHC)** Dated **27th February 2025**

You are requested to submit quotations for the **Acid De-Nitration Plant (HE & Prop Units) alongwith accessories** noted in the Schedule to the Tender. Offers should be sent duly sealed envelopes. Please note the following instructions for filling the tender: -

1. SUBMISSION OF TENDER

1.1 Tenders will be opened at **1100** hours on **08th April 2025** and must reach as per address given below on or before **1030** Hours upto due date. The tender received late will not be entertained. You may witness the opening of the tender if you so desire. If a representative is deputed, he should bring a letter of authority from you.

1.2 Only one tender should be included in one envelope. The outside of the envelope should be inscribed with:-

Tender Enquiry No: **Wah-1800-12-ADN-D.O(JBHC)**

Tender to be opened on: **08th April 2025**

Address: - **Bid Center, CR Section, C-04 Building,
POF Wah Cantt**

Tele: - 0092-51-9055-29201

Fax : - 0092-51-9271400

1.3 The bids received in factories will not be entertained.

1.4 If envelope does not indicate reference of T.E or received late the same may be returned un-opened.

2. GENERAL INSTRUCTIONS REGARDING PREPARATION OF QUOTATIONS

2.1 Case will be processed exactly as per **PPRA Rules 36(d)** in favor of most advantageous bid and **two stage two envelope bidding procedure** will be utilized for open competitive bidding. The prices should be filled in column 4 and delivery date in column 5 of the schedule to this Tender Enquiry. The undertaking should be signed at the bottom of the Schedule which shall form the Quotation. You may use a separate sheet if necessary

2.2 For Plant and Machinery, you are required to quote in two parts:-

- Part I **"TECHNICAL OFFER"** It should exclusively give technical details and literatures/brochures of the offered **Acid De-Nitration Plant (HE & Prop Units) alongwith accessories**, validity date, delivery schedule and signed undertaking given of the schedule to this Tender Enquiry. It must not indicate price, costs etc. Only confirmation regarding submission of Bid Money may be notified with technical proposal.
- Part II **"COMMERCIAL OFFER"** It should indicate the commercial terms e.g. price, terms of payment, mode of payment, mode of supply. The commercial offer shall include separate price of;
- i. **Acid De-Nitration Plant (HE & Prop Units) alongwith accessories**
 - ii. Spares
 - iii. Erection, Commissioning & Trial Production Run
 - iv. Pre-shipment Inspection
 - v. Documentation
 - vi. Training (Abroad & Onsite)
 - vii. Total Price

Each part should be placed in a separate sealed cover. The envelopes should be inscribed with: Part I "Technical Quotation without price" and Part II "Commercial Quotation with Price."

- 2.3 The quotation must remain valid for, at least **120 days** from the date of opening of tenders.
- 2.4 The quotation should hold good for any reduced or enhanced quantities without notice.
- 2.5 In the event of non-acceptance of offer, intimation may be given to the Tenderers on their request.
- 2.6 Conditional offers or alternative offers are likely to be ignored.
- 2.7 Quotations should be based on **F.O.R** or **F.O.B**:
- a) **In case of F.O.R Basis Supply:**
 - i. F.O.R. station of Dispatch basis, i.e. delivered free on rail, inclusive of packing and forwarding charges. The stores will be booked under Military Credit Note, to be provided by the purchaser. and/or Free delivery at POF's stores at **Gate # 6, JBH COMPLEX, POF WAH CANTT.**
In this case Octori duty will be payable by the supplier.
 - ii. Taxes and Duties etc. where applicable, must be shown separately, quoting reference to Registration No. in cases of Sales Tax and relevant authority in the case of others. Offer without these clarifications and inclusive of Taxes and Duties may be ignored.
 - iii. Taxes and duties levied on or after Tender opening date or on or after the date offer was signed and dispatched will be allowed to include in the offered rates.

- iv. Suppliers will furnish a certificate, issued by Excise & Taxation Deptt, that he has cleared all Professional Tax payable by him" Offers received without this certificate will be rejected.
- v. Suppliers will render necessary information regarding hazardous effects on environment, of the materials/products supplied by them, in their quotations and shipping/dispatch documents.
- vi. If the requisite information is not furnished on the T.E forms or offer received is not conformity with the requirement of the T.E such offer shall be ignored.
- vii. Payment of duties/Taxes including professional tax (where applicable) must be supported by proof of having paid these to concern Govt. Taxation Deptt:
- viii. Date and Stamp of the Postal Order must be visible.
- ix. The payment to the registered supplier will be linked with the active taxpayer status of the supplier as per FBR database. If any registered supplier is not in ATL his payment would be stopped till he files his mandatory returns and appears on ATL of FBR.
- x. Status of your firm with POF (Registered/Un-Registered) should be mentioned in your offer.
- xi. Registered firms are required to provide copy of valid registration letter with POF.
- xii.
 - a. Only registered suppliers (with Sales Tax & Income Tax deptt) who are on Active Taxpayers List (**ATL**) of FBR are eligible to supply goods/services to Govt. Depts.
 - b. The payment to registered persons may be linked with the active taxpayer status of the suppliers as per **FBR** database. If any registered supplier is not in ATL his payment should be stopped till his mandatory returns and appears on **ATL of FBR**.
- xiii. **TENDER FEE**
The tender must be accompanied by a non-refundable fee by means of a crossed postal order/pay order of **Rs 500/-** in favour of **MANAGING DIRECTOR JBH COMPLEX POF Wah Cantt.**

b) In case of F.O.B Basis Supply:

- i. The consignment will be shipped through Pakistan National Shipping Corporation (PNSC). In case there is no PNSC service in the country of shipping, please quote on C & F basis. The freight should be indicated separately. Insurance premium should not be included in the quoted price. However, where insurance is considered necessary, advice to that effect should be given in the quotation.
- ii. Submission of the offer through an agent in Pakistan should be avoided. In case it is considered inevitable, the agent's quotation must invariably be accompanied by the original proforma invoice from the principals/manufacturers.
- iii. Country of origin and port of shipment to be stated.
- iv. The offer of principal must clearly indicate whether the rate quoted is inclusive of agent's commission, and if inclusive rate of commission included be specified.

- v. Suppliers will render necessary information regarding hazardous effects on environment, of the materials/products supplied by them, in their quotations and shipping / Dispatch documents.
- vi. If the requisite information is not furnished on the T.E form or offer received is not in conformity with the requirement of the T.E such offer shall be ignored.

c) **BID MONEY**

Bid Money at the rate mentioned bellow should accompany the tender (with commercial offer) in the shape of Deposit At Call Receipt, from a scheduled Bank drawn in favour of "**Managing Director - JBH Complex Wah**"

i.	Registered / indexed firm including Foreign firms	02% of quoted value subject to max ceiling of Rs. 0.50 M
ii.	Registered / Un-indexed firms including Foreign firms	03% of quoted value subject to max ceiling of Rs. 0.75 M
iii.	Unregistered firms including Foreign firms	05% of quoted value subject to max ceiling of Rs. 1.00 M
iv.	Govt. Organization / production units / State Owned Enterprises / Welfare Projects of Svcs HQ	Rs. 0.50 M
v.	Earnest Money will be returned to un successful (less first three lowest quote firms) bidders on opening of commercial offer	
vi.	Earnest / bid Money will be returned to successful bidder on submission of unconditional BG	
vii.	Provisional acceptance of bids if bid money deposited by the firms is lesser than the given amount, with the intimation to the bidding firms to deposit additional amount within 10 days of opening of bids. However, procurement process will continue.	
viii.	Tenders received without / less Bid security will be rejected.	
ix.	Intimation regarding submission of bid money must be endorsed in technical offer.	

3. **ACCEPTANCE OF OFFERS**

The purchaser may reject all bids or proposals at any time prior to the acceptance of a bid or proposals, but is not required to justify grounds for its rejection. The purchaser shall incur no liability towards suppliers or contractors who have submitted bids or proposals.

4. **FAILURE TO SUPPLY STORES**

The specified delivery period (time and date of delivery / dispatch of stores) is the essence of the contract. All deliveries must be completed by the specified date(s). In failure to deliver stores within the scheduled time shall have arisen from "**Force Majeure**" which the Purchaser may admit as reasonable ground for further time, he will allow such additional time (without imposing liquidated demurrage) as he may consider to have been required by the circumstances of the case, of which he will be the sole judge and his decision will be final, otherwise he will be entitled at his option:

- a. "In case of unsupplied portion of the contract and unsatisfactory performance, the contract shall be rescinded by forfeiture of security and guarantee by the authority which approved award of the contract".

- b. "To recover liquidated damages when the government competent purchase officers on behalf of the government is satisfied that the failure to supply the stores within the scheduled delivery period has been for reason within the control of the suppliers and or if the government has suffered loss for reasons of belated delivery these liquidated damages if imposed will be recovered up to the rate of 02% but not less than 01% of the value of unsupplied quantity of the items per month or a part of a month for the period exceeding the original delivery period subject to the provision that the total liquidated damages thus leviable will be not exceed 10% of the total contract value of the particular stores which remained unsupplied either in part or in full."

OR

- c. To withhold any payment due to the supplier until the whole of the stores have been supplied and/ or to direct deduction or recover, where considered necessary.

OR

- d. To repurchase from elsewhere, at the risk and expense of the supplier, other articles of the same or similar description as he thinks fit to make good this default to the extent necessary, by canceling the contract, either wholly or for the unsupplied balance and with/ or without intimation to the supplier who shall be liable for any loss which the purchaser may sustain due to repurchase but shall not be entitled to any gain on repurchase.

5. **"FORCE MAJEURE"**

- 5.1 "Force Majeure" shall mean any event, Act / or other circumstances, not being an event, act or circumstances, under the control of the purchaser or of the supplier. The Supplier shall notify the Purchaser in writing of any such event within 15 days by Fax / Telex / Telegram of its commencement, which is relied upon by the supplier for its failure to comply with its obligation. The Purchaser shall have the right to conduct investigations to satisfy itself about the genuineness of the "Force Majeure" event. Non-availability of raw materials for the manufacture of stores, or of export permit for the export of the contracted stores from the country of its origin, shall not constitute "Force Majeure".

5.2 **FRUSTRATION**

If by reason of "Force Majeure" any consignment shall not be delivered by the due date, then the delivery period may be extended appropriately for the purpose provided the said consignment shall be ready within four calendar months of the stipulated delivery date. If the said consignment shall not be ready after the lapse of four calendar months as aforementioned, then the Purchaser shall have the right to cancel the contract informing the Supplier of the cancellation in writing. This, however, will not apply to consignments already accepted and delivered according to the terms of this contract. The Supplier will not be entitled to any compensation whatsoever as a result of this cancellation.

6. **SECURITY OF INFORMATION**

The tenderer and his employees must not communicate any information relating to the sale/purchase of stores under this enquiry to any person other than the manufacturer or to any press or agent not authorized in writing by POFs to receive it. Please return the Schedule to the Tender duly signed by the specified date, alongwith the specifications drawings etc. if any, enclosed herewith - even if you are unable to quote.

WARNING

In case the firm abstain from making offers or fail to return/acknowledge the tender form by the specified date on three consecutive occasions, no further tender enquiry may be issued to them and their names would liable to be removed from the approved list.

Yours faithfully,



(Raheel Anjum)
Managing Director – JBH Complex Wah
for **PAKISTAN ORDNANCE FACTORIES**
Office Tel. # 0092-51-905529201,
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PAKISTAN ORDNANCE FACTORIES

Schedule To Tender Enquiry No. **Wah-1800-12-ADN-D.O(JBHC)**

Dated **27th February 2025** to be opened on **08th April 2025**

For Plant and Machinery

1 Item No	2 Description with Spec etc.	3 Capacity	4 Price		5 Delivery Date
			In Figures	In Words	
i.	Acid De-Nitration Plant (HE & Prop Units) alongwith accessories (Technical Details are attached as Annexure-A)				
	Spares				
	Erection, Commissioning & Trial Production Run				
	Pre-shipment Inspection				
	Documentation				
	Training (Abroad & Onsite)				
Total Price					

2. **SPECIAL CONDITIONS AND EVALUATION CRITERIA**

- i) Chinese firms can quote in Chinese currency i.e. Yuan.
- ii) For comparison of bids quoted in different currencies, the price will be converted into single currency i.e. Pak Rupees
- iii) The rate of exchange shall be the selling rate prevailing on the opening of bids (notified by State Bank of Pakistan on that day).
- iv) Undertaking must be signed.
- v) Based upon the information being provided by the firms, only those firms will be awarded contract(s) who fulfill all the T.E. requirements.
- vi) Case will be processed and contract will be awarded to the firm(s) who will fulfill the evaluation criteria as **per PPRA** Rules.
- vii) Grand Total of offer must be mentioned in your quotation
- viii) LOI (Letter of Intent) is the part of purchase procedure & will be considered as legal document.

3. **Undertaking**

Should our offer be accepted, we hereby undertake to supply the store/render the services contracted on the basis of General Conditions of Contract embodied in Form POF 1281, and to deposit the performance bond within the prescribed time, failing which it will constitute a breach of contract, and POF will have the right to purchase the store/services elsewhere at our risk and cost.

Place _____
Date _____

Signature of the Tenderer _____
Name _____
Position _____
Address _____
Income Tax G.I.R No. _____

**DETAILED SPECIFICATION OF
ACID DE-NITRATION PLANT (HE & PROP UNITS)**

- **NOMENCLATURE** Acid De-Nitration Plant (HE & Prop Units) Capacity 100 MT/Day
- **QUANTITY** 01 No.
- **MAIN FEATURES OF EQUIPMENT**

JBH Complex requires De-nitration Plant, based on vacuum concentration technology using suitable heating media, having minimum energy consumption and best suitable material of construction for operating conditions. The detailed technical requirements and specifications are given below:

1. GENERAL REQUIREMENT

- 1.1. Denitration Plant is required for De-nitration of spent acid. This spent acid is generated at the existing propellant production cycle (Nitrocellulose, Nitro Glycerin) and High Explosives production cycle (MNT, TNT and Tetryl). The spent acid from both sources will be treated separately i.e. one at a time or both units on as and when required basis.
- 1.2. Single Plant comprising of 02 units viz. De-nitration unit (Prop Cycle) and De-nitration unit (HE Cycle) along-with related accessories are required for treatment of Spent Acid (prop Cycle) and Spent Acid (HE Cycle) with absorption unit and utility units along with 02 years spares. The capacity of each unit should be treatment of 100 M.Tons spent acid per day.
- 1.3. Independent de-nitration units for HE, Capacity 100 M.T/day (Preferably 02 columns having capacity 50 M.T/day each) & Independent de-nitration unit for Prop Cycle, Capacity 100 M.T/day (Preferably 02 columns having capacity 50 M.T/day each)
- 1.4. **PLANT CAPACITY:**
1.4.1. Detail is given below:

<u>De-nitration Unit (Prop Cycle):</u>	<u>De-nitration Unit (HE Cycle):</u>
Treatment of 100 M.Ton per day of spent acid from Prop Cycle (Preferably 02 columns having capacity 50 M.T/day each)	Treatment of 100 M.Ton per day of spent acid from HE Cycle (Preferably 02 columns having capacity 50 M.T /day each)

- | | | |
|-------------------------------|---|--|
| 1.4.2. Working days | = | 250 days / Annum |
| 1.4.3. Annual capacity | = | 25000 M.T / Annum / unit |
| 1.4.4. Main product | = | Sulphuric Acid 65% - 72% and
Nitric acid 97% - 98% (Concentration) |
| 1.4.5. By-product | = | Nitric acid 50% - 55% (Concentration),
recovered after condensation, cooling and
absorption (in absorption system) |

1.5. KEY REQUIREMENTS:

- 1.5.1. Single Plant comprising of 02 De-nitration units for Prop Cycle and HE Cycle (01 for each)
- 1.5.2. PLC based control system
- 1.5.3. All over head feeding tanks
- 1.5.4. Sulphuric acid and nitric acid collection system.
- 1.5.5. NOx fumes absorption system.
- 1.5.6. All other essential accessories.
- 1.5.7. Plant should be technically advance, environment friendly and economical.
- 1.5.8. Best suitable materials for construction and equipment should be used considering the operating conditions.

1.6 KEY FEATURES OF PROCESS AND PLANT:

1.6.1 LATEST SOLUTION:

Offered plant should be provided with smart/latest version of Single Plant comprising of 02 units viz De-nitration unit (Prop Cycle) and De-nitration unit (HE Cycle) along with related accessories are required for treatment of Spent Acid (prop Cycle) and Spent Acid (HE Cycle) with absorption unit and utility units along with 02 years spares.

1.6.2 The capacity of plant should be 100 M.Tons spent acid per day (each unit).

1.6.3 STACK/EFFLUENT GAS QUALITY:

1.6.2.1 NOx emission limit (at stack point) = 150 ppm max.

1.6.2.2 Work place = 30 ppm max.

1.6.4 STORAGE CAPACITY OF TANKS:

1.6.4.1 Raw Material / Feed / Spent Acid Tanks

STORAGE TANK (PROP CYCLE)			STORAGE TANK (HE CYCLE)		
No. of Tanks	=	03	No. of Tanks	=	04
(Including stirrer with gear box & motor)			Capacity	=	100 M.T each
Capacity	=	100 M.T each			
Media	=	As per Specification	Media	=	As per Specification

1.6.4.2 PRODUCT (DOV) TANK:

Storage Tank (Prop Cycle)			Storage Tank (HE Cycle)		
No. of Tanks	=	03	No. of Tanks	=	03
Capacity	=	100 M.T each	Capacity	=	100 M.T each
Media	=	As per Specification	Media	=	As per Specification

2. RAW MATERIAL SPECIFICATIONS:

De-nitration Unit (Prop Cycle):			De-nitration Unit (HE Cycle):		
Feed Specifications			Feed Specifications		
Spent Acid from Propellant cycle with composition (by weight) of:			Spent Acid from High Explosives cycle (Mainly TNT) with composition (by weight) of:		
• Sulfuric Acid	=	Min 60%	• Sulphuric Acid	=	Min 60%
• Nitric Acid	=	10-20%	• HNO ₃	=	Max. 2%
• Water	=	Balance	• HNO ₂	=	Max. 2%
• Nitro Glycerin	=	Up to 3%	• Water	=	Balance
• Nitro Cellulose	=	Up to 3%	• TNT/DNT	=	up to 1%
• Temperature	=	Ambient	• Temperature	=	Ambient

3. YIELD

- Recovery of H₂SO₄ = 100 %
- Recovery of HNO₃ = 95 %

4. FINISHED PRODUCT SPECIFICATION:

Product Specifications (Prop).			Product Specifications (HE).		
Dilute Sulphuric Acid with composition of:			Dilute Sulphuric Acid with composition of:		
• Sulphuric Acid	=	65% minimum	• Sulphuric Acid	=	65% minimum
• Nitric / Nitrous Acid	=	0.01% Max	• Nitric/ Nitrous Acid	=	0.01 % Max
• Nitrobodies (Nitroglycerin, nitrocellulose)	=	0.05% Max	• Nitro bodies (DNT/ TNT)	=	0.02% Max
i. Concentrated Nitric Acid with composition of:					
• Nitric Acid	=	97 - 98%			
• Nitrous Acid	=	0.01%			

By-Product Specifications (Prop).	By-Product Specifications (HE).
Nitric acid 50% - 55% (Concentration), recovered in absorption system	Nitric acid 50% -55% (Concentration), recovered after condensation, cooling and absorption (in absorption system)

5. RAW MATERIAL AND UTILITY CONSUMPTION:

- 5.1. Plant should be economical and efficient in all aspects.
- 5.2. The supplier should provide following data against De-nitration of 01 M. Ton of spent acid treatment.

5.2.1. UTILITIES CONSUMPTION

- 5.2.1.1. Electrical power,
- 5.2.1.2. Cooling water,
- 5.2.1.3. Steam,
- 5.2.1.4. Raw water,
- 5.2.1.5. Demin water,
- 5.2.1.6. Chilled water,
- 5.2.1.7. Compressed air,
- 5.2.1.8. Instrument air etc

6. SCOPE OF SUPPLY:

6.1 HARDWARE (MECHANICAL & ELECTRICAL):

The following hardware shall be included in the supply;

- 6.1.1 De-nitration plant complete in all respects, including all process equipment and accessories, required for installation and successful commissioning of the plants.
- 6.1.2 All overhead / buffer tanks. Day tanks for feed and product tanks for dilute sulfuric acid will be provided by supplier (Preference will be given to suitable material other than Lead).
- 6.1.3 Necessary unit for removal of Nitrobodies present in the feed and equipment for disposal / drainage of Nitrobodies from condensers without shutdown and any interruption in plant operation.
- 6.1.4 Complete NO_x absorption battery for the offered De-nitration plant, alongwith two suction blowers / vacuum / compressors and Electric Motors.
- 6.1.5 The supplier shall make necessary arrangements so that NO_x concentration emanating from the stack should not exceed 150 PPM. (Note: Price & design of battery towers to be quoted separately.)
- 6.1.6 Quantity of each type pump must be 03 Nos. (01 in operation, 01 as standby and 01 as a spare).

- 6.1.7 All pumps shall be with motors having current indication, trip indications for overload and isolation valves
- 6.1.8 Motors must be suitable for continuous operation at ambient temperature of 60°C maximum, having insulation Class 'F' environment protection Class IP 65 and corrosion resistant body.
- 6.1.9 All motors below the rating of 10KW be supplied with soft starters and above the rating of 10KW with VFDs or suitable as per plant requirement.
- 6.1.10 All pumps must have most appropriate seals (mechanical / hydrodynamic).
- 6.1.11 Self-contained water-cooling tower along with soft water production facility of suitable capacity including installed standby re-circulation and supply pumps, interconnecting piping, valves, fittings and instrumentation up to De-nitration Plant.
- 6.1.12 Complete Lifting hoist along with supporting beam suitable for all type of glass and steel equipment together with moving trolley.
- 6.1.13 Control center for all motors, stop/start stations with ampere meters, perforated cable trays for power & instrumentation and mounting accessories along with acid fume and moisture resistant cables for electrical and instrumentation.
- 6.1.14 One suitable capacity of online UPS (Uninterrupted power supply) and auto start/stop electric power generator for lights of process and utility buildings, control panel & necessary pumps to cope with emergencies due to power failure.
- 6.1.15 Control mechanism to bring down vacuum gradually and safely in case of electric / emergency shutdown.
- 6.1.16 On line digital density meters required for measuring the concentrations of feeds and products during the process.
- 6.1.17 The sensor and transmitter of Mag. Flow meter must be separate and sensor body be of S.S.
- 6.1.18 Glass lining defect detector is required, in case Glass lined steel (GLS) equipment is offered.
- 6.1.19 Repair kit for repair of glass lined vessels/equipment along with 04 Tool kits for installation & maintenance of mechanical, glass, glass, lined equipment.
- 6.1.20 02 tool kits for erection, maintenance, calibration, testing & programming of electrical equipment and instruments including 01 set of master calibration and test equipment and 01 Emerson 475 having easy upgrade facility (HHT), HART and foundation field bus, ruggedized 250 Ohm load resistors 06 Nos., Irda to USB adaptor 02 Nos., system card (SD) reader with USB interface, rechargeable batteries, mains battery charger and carrying case.
- 6.1.21 De-Nitration Plant shall be equipped comprehensively (where required) with measuring and control system to allow remote process control with record of all essential process parameters.
- 6.1.22 De-Nitration Plant will have a PLC based control system with windows based operating system, capable of programming, up loading, down loading and report printing with SMART type field transmitters having local digital indication and HART protocol.
- 6.1.23 All operations shall be carried out from a separate remote control panel room
- 6.1.24 In case of any abnormality, emergency stop for Den Plant
- 6.1.25 The design will have be maximum flexibility, So that the Den Plant can run DCS or Even without DCS but with all PID loops, if so required.
- 6.1.26 Software for all software-based instrument shall be included in supply for work and re-works at any level of application.
- 6.1.27 Software shall be supplied on CD / DVD format (in duplicate) with complete license, activation codes, CD keys, and there should be no requirements of any license of software for over net/web/online registration or activation.

- 6.1.28 The software related to the plant will be in the ownership of purchaser in every sense of the world and for entire life of the plant
- 6.1.29 The life of the plant is to be confirmed by the supplier 20 years.
- 6.1.30 Complete chiller unit in all respect ready to produce the chilled water for production plant as per required pressure, temperature and flow on turnkey basis.
- 6.1.31 Package type HVAC units with duct complete in all respect to meet the temperature requirement of production plants as per design.
- 6.1.32 Package type induced cooling towers complete in all respect along with supply and circulation pumps.
- 6.1.33 Complete Instrument Air System including air compressors, oil & moisture separators and dryers to supply quality air to instruments as per ISA standards and minimum dew point of -30°C (if required).
- 6.1.34 Suitable capacity of demin and softening plant as per requirement plant and cooling tower.

6.2 BATTERY LIMIT

- 6.2.1 Battery limit means one meter outside the wall of the building up to, which the supply of services and raw materials will be provided by the purchaser.
- 6.2.2 The purchaser will terminate the services/feeds with flanges.
- 6.2.3 All utilities and feed acids etc. will be provided by the purchaser at zero level.

7. INSTRUMENTATION AND PROCESS CONTROL:

Instrumentation and process control systems should be provided for complete plant where required. Guidelines for parameters required to be controlled indicated at control panel are given below;

7.1 TEMPERATURE:

- 7.1.1. Reaction vessels (auto control + manual control + indication)
- 7.1.2. Feeding raw material (indication) where required
- 7.1.3. Cooling/chilled water system (indication)
- 7.1.4. Any other points required for safe operations

7.2 FLOW CONTROL (WHERE REQUIRED):

- 7.2.1. Waste acid (auto control + manual control + indication)
- 7.2.2. Steam (auto control + manual control + indication)
- 7.2.3. Any other points required for safe operations

7.3 PRESSURE:

- 7.3.1 Steam (auto control + manual control + indication)
- 7.3.2 Compressed air (auto control + manual control + indication)
- 7.3.3 Instrument air (auto control + manual control + indication)
- 7.3.4 Any other points required for safe operations

7.4 LEVEL:

- 7.4.1 Feeding head tanks (indication + alarm)
- 7.4.2 Day tanks (indication)
- 7.4.3 Any other points required for safe operations

7.5 pH:

- 7.5.1. pH (indication + alarm) where required

7.6 EMERGENCY SAFETY CONTROLS:

- 7.6.1 Alarm at high/low temperature of all reaction vessels and critical points.
- 7.6.2 Alarm at high/low temperature of all reaction vessels and critical raw material feed cut off.
- 7.6.3 Indication of all feeding pumps in running/shut down.
- 7.6.4 Alarm at low pressure of main supply of steam.
- 7.6.5 Alarm at high and low temperature and pressure of cooling water, chilled water.
- 7.6.6 Alarm at high and low pressure of instrument air, compressed air.
- 7.6.7 Alarm indication of voltage fluctuations
- 7.6.8 Any other points required for safe operations.

8. FEATURES REQUIRED FOR CONTROL SYSTEM:

- 8.1 Plant shall be equipped comprehensively with PLC based control system for measuring & monitoring to allow remote robust process control.
- 8.2 The measuring and control instruments must be accompanied with master calibration equipment.
- 8.3 All field instruments and electrical equipment shall be EEx and or Exi with IP ratings minimum IP 67, with 4-20mA signal + HART, local digital indication and keypad.
- 8.4 All solenoid and electric operated valve shall be of low voltage Max 24 V
- 8.5 All variable control valves shall be pneumatic actuated with supply air 1.4 bar, signal input 4-20 mA DC and positioner installed.
- 8.6 All field Pneumatic tubes & impulse lines shall be of suitable material for the environment.
- 8.7 Auto & manual control system to be adopted for main processes in the production line with complete control & command in both auto & manual modes.
- 8.8 Complete support in Professional version software and hardware interfaces required at any level of application for field development, programming, troubleshooting of PLC, VFDs, soft starters, controllers, sensors & calibration of all instruments, etc to be included in the supply along with CD Keys & all level passwords. Life time license for POFs and software up-gradation facility in CD / DVD formats with activation.
- 8.9 All measuring instruments span values, alarm points and any correction factor if applied will be documented and handed over to purchaser
- 8.10 All initial parameters for setting of all control devices will be documented and handed over to purchaser.
- 8.11 All the housing shall have SS 316L or compatible for the working environment.
- 8.12 All flow Transmitters shall be of Electromagnetic type with lining material and pressure rating suitable for each application.
- 8.13 Temperature sensing shall be with temperature transmitter panel DIN Rail mount and control room with local digital indication, key pad and HART electrical connection push in type.
- 8.14 Body finish should be most suitable for environment.
- 8.15 PLC and HMI shall be programmed in FBD or Ladder Logic and language shall be English at all levels. Software and interface/cables for PLC and HMI shall be included to communicate with PC

- 8.16 It shall have PLC control with operator terminal system shall be of latest model & version PC requirement is at least core i7 latest generation, with 40 inch (Min) LEDs monitors having a 16:10 display ratio. Memory minimum 16 GB RAM & 2TB SSD. Operating system Windows platform latest version (registered) at the time of supply. In an industrial grade tower form factor, equipped with adequate cooling system best suitable for dusty environment along with UPS for each system having a backup time of at least 4 hours.
- 8.17 The key equipment and processes must be equipped with CCTV monitoring system with at least 8 MP night vision IP cameras with EEx enclosures. at entrance facial reorganization facility by high resolution cameras at entrance of each point. Recording of all essential points with backup of at least 01 month
- 8.18 There shall be no password at any level of application on any equipment and system
- 8.19 **RECOMMENDED OEMS (LIKELY SUPPLIERS):**

8.19.1 The recommended OEMs for all instrumentation, control system, electrical equipment, hydraulics, pneumatics, Pumps, Valves, Air Compressors, Water Chillers, fire detection sensors and sprinkler system are as under:

Sr. #	CATEGORY	RECOMMENDED OEM
1	CONTROL SYSTEM / DCS	i. ABB ii. Allen Bradley iii. Honeywell iv. Eaton, Germany v. Schneider electric vi. Siemens vii. Notifier OR Equivalent under the license of above OEMs
2	ELECTRICAL & INSTRUMENTATION	i. Eaton, Germany ii. VEGA, Germany iii. Endress+Hauser iv. Flowline, USA v. Krohne, Germany vi. Schneider vii. Siemens viii. ABB ix. Emerson x. Honeywell xi. Tokyo Keiki Inc., Japan xii. WIKA, USA, All sensors / instruments will be compatible to the main PLC control system. OR Equivalent under the license of above OEMs

3	CONTROL VALVE AND PNEUMATICS	<ul style="list-style-type: none"> i. Emerson ii. Samson iii. FESTO, Germany iv. COAP, Netherland v. Fisher Controls vi. ArcaRegler, Germany vii. Conval viii. Flowserve, USA ix. Metso flow control, Finland x. Swagelok, USA xi. Comp Air xii. SMC <p>OR Equivalent under the license of above OEMs</p>
4	HYDRAULICS	<ul style="list-style-type: none"> i. Rexroth ii. Hydac iii. Parker <p>OR Equivalent under the license of above OEMs</p>
5	VACUUM PUMPS / COMPRESSORS / BLOWERS	<ul style="list-style-type: none"> i. Atlas Copco ii. ROBUSCHI, Italy iii. Busch, USA iv. Emmecom, Italy v. Pompatrivaini, Italy vi. GrundFos, UK <p>OR Equivalent under the license of above OEMs</p>
6	CENTRIFUGAL PUMPS	<ul style="list-style-type: none"> i. Richter Germany ii. IWAKI USA iii. Paul Bungartz, Germany iv. Wilfly, USA v. March Pumps, USA vi. GrundFos, UK vii. Sulzer, Switzerland viii. KSB, Germany ix. Floser, USA x. Ebara, Japan xi. ROBUSCHI, Italy xii. Busch, USA xiii. Emmecom, Italy xiv. Pompatrivaini, Italy <p>OR Equivalent under the license of above OEMs</p>
7	ROVs (VALVES)	<ul style="list-style-type: none"> i. GalassiOrtolanni, Italy ii. Richter, Germany iii. Saunders, UK iv. SpiraxSarco UK v. Flowserve, USA <p>OR Equivalent under the license of above OEMs</p>

8	AIR COMPRESSORS	<ul style="list-style-type: none"> i. Atlas Copco ii. Kaeser iii. Ingersoll Rand iv. CompAir v. Hoer burger vi. Cope land vii. Sauer viii. Boge ix. Air pro <p>OR Equivalent under the license of above OEMs</p>
9	WATER CHILLERS	<ul style="list-style-type: none"> i. HafnerMuschler ii. Trane France iii. J & Hall Dartford England iv. Daikin v. Hitachi vi. Dunham-Bush vii. Armstrong viii. Ingersoll Rand <p>OR Equivalent under the license of above OEMs</p>

8.20 TREND RECORDING AND MONITORING:

8.20.1 Trend recording and Data logging of all the process, tripping and critical parameters may also be included for monitoring.

8.20.2 Data to this effect will have to be stored for at least 60 days.

8.21 SOFTWARE:

8.21.1 Complete support in professional version software and hardware interfaces required at any level of application for field development, programming and calibration of all instruments, VFD/ Soft starter, PLC, HMI and Fire system to be included in supply along with CD keys, life time licenses exclusively for POFs and up-gradation facility in CD/DVD formats with activation duly installed in hand held configurator of latest version.

8.21.2 All software shall include license keys, hard dongles and there shall be no requirement for on web activation.

8.21.3 All activations shall be for life time exclusive for POFs.

8.21.4 Language for all software's shall be English at all level of applications.

8.21.5 All programs fed to any programmable instrument, equipment, PLC will be supplied to POFs without any password in hard and softcopy.

8.22 FIELD CABLES, JB'S AND ERECTION SUPPORT:

8.22.1 Field cables should be acid resistant, fire retardant and cable trays should be supplied with installation hardware & support.

8.22.2 Electrical cable installation support should include all accessories required e.g. thimbles, lugs, cable ties, glands, junction boxes, termination support etc.

8.22.3 Tools including crimping, peeling, cutting, bending, for cables & cable trays etc. should be included in supply.

8.22.4 Lighting Arrestors at plant building should be included in scope of supply

8.22.5 Suitable lighting arrangement at plant's building

8.23 TOOLS, TACKLES AND EQUIPMENT:

- 8.23.1** 04 Non sparking Tool Kits comprising of all essential tools required for installation and maintenance of mechanical equipment.
- 8.23.2** 02 Non sparking Tool Kits comprising of all essential tools, master calibration and test equipment required for erection, maintenance, calibration and programming of electrical and instruments equipment.
- 8.23.3** Following instrument calibrator to be included in the scope of supply compatible with the instruments used.
 - 8.23.3.1** One HART Calibrator
 - 8.23.3.2** One Portable / handheld calibrator for pressure gauges / instruments.
 - 8.23.3.3** Two temperature calibrator dry block for high and low temperature

8.24 SPARES:

- 8.24.1** 02 year's spares recommended by the OEM shall be supplied.
- 8.24.2** In addition, following spares shall also be included in scope of supply;

8.24.2.1. MECHANICAL:

- 8.24.2.1.1** Spares for suction & delivery valves, bearing and oil seals
02 Nos. for each pumps are also required
- 8.24.2.1.2** Impellers 01 No for each type
- 8.24.2.1.3** Mechanical seal 05 Nos for each type
- 8.24.2.1.4** Shaft 01 No for each type

GLASS LINED SPARES	All equipment, pipes, pipes fittings (bend, tee, reducers, spacers) PTFE bellows, feed pipes.(01 against 04 or at least 01of each design and size.
GLASS SPARES	All glass equipment,(column, heat exchangers, vessel) pipeline, PTFE bellows, feed pipe, spacers, gaskets at least 02 of each size and design.
COLUMN PACKING (RASCHIG RINGS)	At least 50% of used at plant of all sizes.
ANY OTHER SPARE OF SPECIAL MATERIAL	i.e tantalum including tantalum heater, PTFE or silicon iron - o1 against each installed.
PUMPS WITH SPECIAL MATERIAL	PTFE lined used at high temperature – 01 against each.
SPARE S.S / SPECIAL ALLOY STEEL PIPES	(if any) for process lines are also required. For each size pipe required 60 meters.
SPARE VALVES OF EACH TYPE AND SIZE	installed inside the plants are also required. 02 Nos. of each for future replacement purpose.
SPARE GEAR BOX	including electric motors and electric panel, 01 set bearing, 02 Nos. for each gear box and motor.
SPARE ACID COOLING COILS / ACID COOLER 02 NOS	In case of metering / chemical dozing pump inside the plant, 01 spare pump with 04 complete set of internal spare parts

- 8.24.2.2. ELECTRICAL:**
Starters, VFDs. Soft starters, Encoders, Sensors, Modules / controllers of the Motors (where standby arrangement is not available),VFD, Soft Starters and encoders etc 01 against 04 installed and 01 against each type in case installed quantity is less than 04 shall be included
- 8.24.2.3. INSTRUMENTS:**
At least one against each installed and for multiple similar equipment of same type minimum one against every 04 installed
- 8.24.2.4. PLC CONTROL SYSTEM:**
At least one against each installed type of CPU, I/O modules, PSU and all communication modules etc and for multiple similar equipment of same type minimum one against every 04 installed.
- 8.24.2.5. SERVICES:**
Recommended spares for HVAC, chilled water unit, softening unit, Cooling Tower, air compressor & utility pumps.

9. DOCUMENTATION:

The supplier will be required to furnish all relevant technical data and drawings for design and complete technology transfer (4 copies each in English language) in hard and soft form including the following:

- 9.1 Detailed Drawings & Specifications of Plant & Equipment.
- 9.2 P & I Drawings, Equipment Layout and Schematic Diagrams.
- 9.3 Detailed Civil Engineering Design/workshop Drawings for civil structure constructions.
- 9.4 Complete layout showing mechanical, electrical installations, utilities, humidification & temperature controlling system etc.
- 9.5 Detailed Erection workshop drawings.
- 9.6 Specifications of materials not included in the supplies but necessary for integration of the offered plant/ equipment.
- 9.7 Production process instruction manuals for sequence wise start up and shut down of the equipment and processes.
- 9.8 Maintenance and services manuals of plant & machinery included with enhancements after commissioning.
- 9.9 Complete safety manuals for all operations and production processes.
- 9.10 Operation manuals for plant and equipment.
- 9.11 Configuration, programming and calibration manuals.
- 9.12 All programs and configurations fed to any instrument, VFD / soft starter and PLC will be supplied in soft and hard copy on Flash Drive/ DVD with no restrictions.
- 9.13 All engineering details, data and tables involved in calibration and process calculations should be provided.
- 9.14 Manufacture and testing methods for the products.
- 9.15 Raw material and Energy Balance Sheets
- 9.16 OEM documents and calibration certificates should be provided for all instruments

10. MATERIAL OF CONSTRUCTION:

- 10.1 Material of construction used must be suitable for at least 20 years plant operations.
- 10.2 Borosilicate / glass lined steel for de-nitration column.
- 10.3 Borosilicate glass/glass lined steel in all the plant components.
- 10.4 Best suitable material in pumps.
- 10.5 Tantalum in heat exchanger and other similar parts.
- 10.6 Poly tetra fluoro ethylene (PTFE) where ever suitable.

11. PRE SHIPMENT INSPECTION:

- 11.1 The store shall be new and shall confirm to the requisite specification. The supplier will arrange Pre-Shipment Inspection at their site and at the site of their sub-contractors and vendors for a period of 15 days.
- 11.2 Pre-Shipment Inspection will be carried out as per following;
 - 11.2.1 Inspection of equipment in respect of material of construction, electrical & instrumentation specifications.
 - 11.2.2 Spares quality and quantity.
 - 11.2.3 Verification that the equipment conforms to the ordered specifications. The team will check the bill of details, assembly protocols and test certificates of the relevant items.
 - 11.2.4 Examination and testing would be carried out where feasible.
- 11.3 The pre delivery Inspection will take place in following manners:-
 - 11.3.1 Pre-Shipment Inspection of mechanical equipment.
 - 11.3.2 Pre-Shipment Inspection of Electrical & electronic equipment.
- 11.4 Pre-Shipment Inspection team will be comprised of 06 members from the buyer side. All expenditure of PSI team i.e. boarding lodging & return air tickets for the visiting teams will be borne by the Buyer. However, internal traveling will be the responsibility of Supplier.

12. ERECTION, COMMISSIONING:

- 12.1 Responsibility of installation / commissioning of plant lies at supplier end.
- 12.2 The plant shall be commissioned and trial production of the plant shall be carried out satisfactorily by supplier's engineers.
- 12.3 Purchaser shall only facilitate in providing number of operators and technicians for the commissioning and trial production of the plant.
- 12.4 The supplier is to indicate the total man-weeks of his engineers / technicians required for erection, commissioning and trial production of plant. Terms and conditions are to be stated clearly.
- 12.5 All expenses, including boarding & lodging, air travel and daily allowances of the engineers / technicians are to be borne by the supplier.
- 12.6 Local transportation shall be arranged by the purchaser.
- 12.7 The supplier shall provide the time schedule for completion of the project.
- 12.8 The supplier shall provide the consumables required for installation and commissioning
- 12.9 The supplier shall replenish the quantity of spares used during installation, commissioning and trial run.

13. **TRAINING:**

13.1. FOREIGN TRAINING:

- 13.1.1 The supplier shall train 20 persons on similar plant for production or at the supplier's works for period of 03 weeks.
- 13.1.2 All the expenditures of training team i.e. i.e. boarding lodging, & return air tickets for the visiting teams will be borne by the Buyer. However, internal travelling will be the responsibility of supplier.
- 13.1.3 This training is to be imparted on process, operation, instrumentation and maintenance of De-nitration plant.
- 13.1.4 In addition, training shall also be given for the repair of glass lined vessel at the supplier's works.

13.2 ON SITE TRAINING:

- 13.2.1 During installation, commissioning and & trial run at site of purchaser's works in presence of supplier's engineers
- 13.2.2 Practical training will be imparted to the concerned maintenance, instrument, production and quality control personnel of the purchaser.
- 13.2.3 The duration of training will be 04 weeks for maximum number of trainees as per plant requirement
- 13.2.4 With proper certification shall be awarded after proper assignment of individuals

14. **TRIAL RUN / FINAL ACCEPTANCE TEST:**

- 14.1 Erection/installation and commissioning to be carried out by supplier, as per drawings and supervision of the seller. However, final inspection of erected plant must be done by BUYER.
- 14.2 The supplier is required to carry out the successful Trail production of the plant and give total 480 hours (144 hours for De-nitration Unit - 1 and 144 hours for De-nitration Unit – 2, 192 Hours for unit-1 & unit-2 simultaneously) qualitative and quantitative continuous trial production at full capacity.
- 14.3 In case of any failure during trial run due to any equipment in supplier's scope of supply the commissioning period will be started from 1st hour.
- 14.4 The supplier shall also provide the guarantee for meeting quantity and quality of the product. In case of any deficiency in terms of quality and quantity of products, all related expenditures to fulfill commitment shall be borne by the supplier.

15. **PAYMENT TERM AND CONDITION:**

The mode of payment will be as under;

- 15.1 70% payment will be released against presentation of shipping documents and acceptance certificate issued by PSI team.
- 15.2 Balance 30% payment will be released against the Final Acceptance Certificate, duly signed by the BUYER after the successful installation, commissioning & trial run of the complete plant along with the related auxiliary units.
- 15.3 All Bank charges incurred in Pakistan in connection with the establishment of L.C. will be borne by the Purchaser, whereas all Bank charges incurred in connection with drawing of payment including charges for confirmation of L.C. by the advising Bank/Foreign Bank will be borne by the Supplier.

16. **TECHNICAL SUPPORT:**

- 16.1 The supplier shall confirm that after handing over of the plants there shall be continuing technical support as and when required by the purchaser.
- 16.2 The purchaser shall be kept informed regarding latest advancement in the related technology for further improvement in the process and operation of plant for a period of 20 years commencing from date of FAT.

17. **USEFUL LIFE OF PLANT:**

- 17.1 Material of construction plays a vital role towards durability and plant life to the greater extend.
- 17.2 Choice of the material must be given due consideration and it must be ensured that provided plant must have useful life for minimum 20 years

18. **CLIMATIC CONDITIONS:**

- 18.1 **Temperature**
 - 18.1.1 Winter = -3 to +20°C
 - 18.1.2 Summer = 30 to 55°C
- 18.2 Relative Humidity = 25 to 90%
- 18.3 Average annual Rainfall = 450 mm
- 18.4 Wind pressure Max. = 75 to 100 mph
- 18.5 Altitude ground level at site = 471 Mtr above sea level.
- 18.6 Earth quake value = 8 on Richter scale

19. **LABORATORY FACILITIES:**

- 19.1 Laboratory facilities are available for testing of Raw materials & finished product.
- 19.2 If any special testing is required, equipment, testing procedure for the same may be included in the scope of supply.

20. **ENGINEERING FACILITIES:**

- 20.1 The plant is to be added to already existing manufacturing Chemical Complex, therefore infrastructure such as fabrication workshop, mechanical, electrical, instrumentation installation and other relevant facilities are already available at site.
- 20.2 Supplier may include special erection equipment like tools & lifting tackles of suitable capacities in the bid.

21. **UTILITIES:**

- 20.1 **ELECTRICITY:**
 - 20.1.1 **Three Phase:** Nominal voltage is 400V which varies between 360V to 440V.
 - 20.1.2 **Single Phase:** Nominal voltage is 230V which varies between 200V to 255V.
 - 20.1.3 Nominal Electric supply Frequency 50Hz
- 20.2 Raw Water at 1.5-2 bar_g (Raw Water analysis is enclosed as Annex-D)
- 20.3 Steam at 3.5 bar having flow 1.5 - 2 MT/Hrs
- 20.4 Compressed air at 2 to 3 Bar only for during erection.
- 20.5 Compressed air at 2 to 2.5 Bar (L.P) at generation point.
- 20.6 Demin Water – 0.8 TPH
- 20.7 Natural Gas at 20 psi

22. **WARRANTY / GUARANTEE:**

22.1 The plant and accessories shall be accepted on Supplier's Warranty / Guarantee with regard to quality and quantity subject to these being technically checked/tested where necessary and accounted for on arrival at Consignee's ware-house in presence of supplier's rep (if desired by supplier) at their cost. The supplier shall render Warranty/Guarantee certificate in duplicate to the Buyer as soon as stores have been dispatched/delivered. This Warranty / Guarantee shall be binding on the Supplier for a period of **12 months** reckoning from the date of successful **Final Acceptance Test of the Plant & related accessories**.

22.2 In case the stores on checking / test after receipt at the BUYER's factory are found not conforming strictly to the relevant specification and other particulars, or found broken during transit, the seller shall immediately replace the rejected/ broken store by acceptable stores free of cost and without any obligation to the buyer and without effecting the project timeline otherwise L.D charges will be imposed as per POF Purchase Procedure. Rejected / broken stores shall be disposed by the seller under his own arrangements. The seller will warrant the acceptable quality of all equipment supplied against all defects or failures due to faulty design, material or workmanship

23. **PERFORMANCE BOND:**

23.1 The SELLER will provide a Bank Guarantee to the tune of 10% of FOB value of the contract on the prescribed Performa for satisfactory execution of the order. It shall be covered by any Scheduled Bank in Pakistan. The Bank Guarantee shall be endorsed in favor of CMA POFs Wah Cantt. The Bank Guarantee shall be furnished by the SELLER within 45 days from the date of opening of letter of credit. The Bank Guarantee will be **valid for a period of 12 months after the successful final acceptance test of the plant**. If the successful trial run is delayed, the SELLER shall arrange the extension of **Bank Guarantee within 30 days from the date** of amendment of L.C. If the Guarantee is not revalidated, the same is liable to be encashed by the CMA (POFs) Wah Cantt.

23.2 If the SELLER fails to furnish the Bank Guarantee within specified period, the BUYER reserves the right to cancel the contract and has the right to purchase the stores at the risk and expenses of the SELLER.

23.3 In the event of unsatisfactory performance or any breach of the Contract, Bank Guarantee shall be forfeited by the BUYER. The Bank Guarantee will be returned to the SELLER by M.D-JBH Complex, POFs Wah Cantt on request after its expiry or after satisfactory performance of the contract whichever is earlier.

24. **SEALED QUOTATION ON FOB BASIS:**

24.1 The supplier to forward quotations/proposals in two parts in separate covers.

24.2 Each envelope must be clearly marked in bold letters as: TECHNICAL PROPOSAL and COMMERCIAL PROPOSAL.

25. **TECHNICAL PROPOSAL:**

Technical Proposal must contain the following;

25.1 List of plant machinery & equipment, measuring and control instruments and other essential accessories to be supplied with the plant as mentioned in para-5, complete with description of materials of construction.

25.2 List of consumables required during installation and commissioning of plants.

- 25.3 List and specifications of the materials not included in the scope of supply but necessary for erection, integration of plants / equipment which are required to be provided by the Purchaser.
- 25.4 Lay out schemes and required building dimensions, together with layout and elevation sketch.
- 25.5 P & I diagrams indicating temperatures, pressures, flow rates, concentrations etc at critical points.
- 25.6 Complete, decoded process flow sheets, showing temperatures, pressures & compositions of various materials, intermediates and final products at different inlets / outlets of major plant items.

26. COMMERCIAL PROPOSAL:

Commercial proposal showing separate prices for each item/store for the following:

- 26.1 Plant and Machinery & equipment, measuring and control instruments and other essential accessories.
- 26.2 Item wise list for two years maintenance, instrumentation and operational spares, to be supplied with the plant, as mentioned in para-6.
- 26.3 Major & Minor items, which are required as optional equipment and facilities but not included in the scope of supply.
- 26.4 Engineering documents mentioned at para-7.
- 26.5 Technical assistance for installation and start up along with men hours.
- 26.6 Training cost of purchaser's engineers / technicians (Para-11)

27. NO – AGENTS:

- 27.1 We shall deal with the supplier directly without involvement of any local and / or foreign agents.
- 27.2 No agency commission shall be paid by the purchaser

28. ORIGIN

The plant / machinery will be accepted from USA / UK / EU / Japan / South Korea OR any other country having manufacturing facility under license of OEM from above origins

29. EXPORT PERMIT

Offers of only those firms will be entertained who will confirm the availability of export permit from their respective government.

WARRANTY / GUARANTEE CERTIFICATE

Firm's Name _____

Contract No. _____ **DATE** _____

1. We hereby guarantee that the goods supplied against the above contract are in all respect in accordance with the relevant specifications and terms of the contract and that the materials used, whether or not of our manufacture, are in accordance with the latest approved standard specifications complete, are of good workmanship / quality throughout, and that we shall replace free of cost, every article or part thereof which before use or in use, shall be found defective, or not within the limits and tolerance of specification requirements, or in any way not in accordance with the terms of the contract.
2. In case of our failure to replace the defective stores free of cost within the period specified by the Purchaser, we will refund the relevant cost.
3. The Warranty / Guarantee will remain valid for **12 Months** reckoning from the date of successful **Final Acceptance Test of the Acid De-Nitration Plant and related accessories.**

Signature _____

Name _____

Status in the Firm _____

Dated _____

BANK GUARANTEE FOR PERFORMANCE
ON JUDICIAL STAMP PAPER OF Rs.100/- OR
AS SUITABLE TO THE ACCOUNT OF BG.

- i) Contract No. _____ Date _____
- ii) Name of Firm/Contractor _____
- iii) Address of Firm/Contractor _____
- iv) Name of Guarantor _____
- v) Address of Guarantor _____
- vi) Amount of Guarantee Rs. _____
(_____)
(in Words)
- vii) Date of Expiry of Guarantee _____

To: **The President of the Islamic Republic of Pakistan**
Through the **CMA POF WAH CANTT.**

Sir,

1. Whereas your good self have entered into Contract No. _____
_____ dated _____
with Messrs _____
(Full Name and Address)

hereinafter referred to as our customer and that one of the conditions of the contract is the submission of unconditional Bank Guarantee by our customer to your good self for a sum of Rs. _____ Rupees/FE(as applicable) _____

2. In compliance with this stipulation of the contract, we hereby agree and undertake as under:
- a) To pay you unconditionally on demand and / or without any reference to our customer and amount not exceeding the sum of Rs. _____ Rupees or FE (as applicable) _____ as which be mentioned in your written Demand Notice.
- b) To keep this Guarantee in force till _____
- c) That the validity of this Bank Guarantee shall be kept **one clear year** ahead of the original/extended delivery period or the warrantee of the stores which so ever is later in duration on receipt of information from our customer i.e. M/s _____
or from your office. Claim, if any must be duly received by us on or before this day. Our liability under this Bank Guarantee shall cease on the closing or banking hours on the last date of the validity of this bank Guarantee. Claim received thereafter shall not be entertained by us whether you suffer a loss or not. On receipt of payment under this guarantee, this document i.e. Bank Guarantee must be clearly cancelled, discharged and returned to us.

- d) That we shall inform your office regarding termination of the validity of this Bank Guarantee one clear month before the actual expiry date of this Guarantee.
- e) That with the consent of our customer you may amend/alter any term/clause of the contract or add/delete any term/clause to/from this contract without making any reference to us. We do not reserve any right to receive any such amendment/alternation or addition/deletion provided such like actions do not increase our monetary liability under this Bank Guarantee, which shall be limited only to Rs. _____
(Rupees _____)
- f) That the Bank Guarantee herein before given shall not be affected by any change in the constitution of the Bank or Customer/Seller or Vendor.
- g) That this is an unconditional Bank Guarantee, which shall be encashed on sight on presentation without any reference to our Customer/Seller or vendor.

Guarantor

Dated: _____

Bank Seal and Signatures