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(Foreign Supplies)



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

To,

Dear Sir,

Reference: T.E # **Wah-1800-12-NC(CNS)-D.O(JBHC)** Dated **11th March 2025**

You are requested to submit quotations for the **Continuous Nitration and Stabilization Unit** 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 **24th 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-NC(CNS)-D.O(JBHC)**

Tender to be opened on: **24th 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 **Continuous Nitration and Stabilization Unit**, 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. Continuous Nitration and Stabilization Unit
- ii. Fire Alarm & Auto Sprinkler System
- iii. Instrumentation and Control System
- iv. Spares
- v. Erection, Commissioning & Trial Production Run
- vi. Documentation
- 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 Octroi 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,
FAX # 0092-51-9271400
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PAKISTAN ORDNANCE FACTORIES

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

Dated **11th March 2025** to be opened on **24th 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.	Continuous Nitration and Stabilization Unit (Technical Details are attached as Annexure-A)				
ii.	Fire Alarm & Auto Sprinkler System				
iii.	Instrumentation and Control System				
iv.	Spares				
v.	Erection, Commissioning & Trial Production Run				
vi.	Documentation				
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 FOR CONTINUOUS NITRATION AND STABILIZATION UNIT

1. **NOMENCLATURE** Continuous Nitration and Stabilization Unit
2. **QUANTITY** 01 No.
3. **MAIN FEATURES OF EQUIPMENT**
 - 3.1 **GENERAL REQUIREMENT**
 - 3.1.1 POF JBHC intends to replace / modernize the existing Batch Nitration with Continuous Nitration and Stabilization Unit to produce Military grade (11.75%-13.5%) & commercial grades (10.7-12.2 Nitrogen) with varying viscosities.
 - 3.1.2 Commercial / industrial grade Nitrocellulose will be produced on the same production line. In case any additional equipment / unit required, its price may be quoted separately.
 - 3.1.2 Capacity: 1200 M.T/Annum Nitrocellulose (dry basis) based on 250 working days.
 - 3.1.3 To attain the capacity & safety of the continuous nitration and stabilization facility, machines/equipment will be replaced in the existing plant after gap analysis.
 - 3.1.4 Technical details regarding specified criteria for acceptance is given as Annex-I;
 - 3.1.5 Layout of Existing plant is given in Annex-II
4. **SCOPE OF UPGRADATION**
 - 4.1 POF JBHC intends to replace / modernize the existing Batch Nitration with Continuous Nitration and Stabilization Unit to produce Military grade (11.75%-13.5%) & commercial grades (10.7-12.2 Nitrogen) with varying viscosities.
 - 4.2 Commercial / industrial grade Nitrocellulose will be produced on the same production line. In case any additional equipment / unit required, its price may be quoted separately
 - 4.3 Capacity: 1200 M.T/Annum Nitrocellulose (dry basis) based on 250 working days
 - 4.4 In view of existing plant condition, Replacement / Modernization of under mentioned equipment / process of the plant are required. However, final verdict to this effect, will be given by supplier after gap analysis.
 - a. **Continuous Nitration**
 - i. Continuous Nitration plant along with pre & post nitrators, mix acid system, fume absorption system (De NO_x), acid transfer pumps, overhead tanks of suitable capacity along with all related accessories
 - b. **De-acidation & Spent Acid Filtration**
 - i. A suitable & efficient Acid/NC slurry separation system is required with remotely controlled multistage continuous centrifuges of suitable capacity along with all related accessories.
 - ii. System to deluge the centrifuge drum with water in order to minimize the risk of a fume off/ NC fire
 - c. **Pressure stabilization units (Auto Claves)**
 - i. Suitable capacity Pressure stabilization units (Auto Claves) along with automatic control system to ensure consistency of product quality along with slurry transfer pumps and buffer tanks.

d. Refining (milling) & Post Stabilization

- i. Post stabilization and disk refiners is required along with fully automatic control system and with standby arrangements

e. Dirt removing (de-sanding) system

- i. Dirt removing (de-sanding) system for the removal of any remaining foreign matter, knots and bundles is required along with slurry dilution & re-concentration system, suitable capacity tanks and slurry transfer pumps

Any other equipment/system required to meet the required quality and capacity may be included

OR

A complete solution for the achievement of NC production as per specification mentioned in 3.1.4 (Annex. I) should be offered with latest technology

- 4.5 On basis of gap analysis, Supplier will incorporate the latest above-mentioned equipment in the existing setup.
- 4.6 The equipments for up gradation will be installed in existing buildings of NC manufacturing and stabilization units. Workshop drawings regarding amendment in existing buildings / foundations (if required) will be provided by the supplier.
- 4.7 The buyer will carry out the requisite civil work as per drawings provided by the supplier.

5. PRE- BID VISIT

Supplier(s) can visit the plant-site, prior to the finalization of their bid(s). For this purpose, they must provide the complete bio-data of visitors along with copy of their passports / I.Ds. The same is required at least two months before the visit for completion of procedural requirements.

6. CAPACITY OF PLANT

- 6.1 Upgraded plant shall be capable to produce 1200 M.T/Annum Nitrocellulose (dry basis) Plant capacity is based on 250 working
- 6.2 Plant / Technology should be labor & energy efficient with minimum re-work & wastages.

7. AVAILABLE RAW MATERIALS SPECIFICATION

Raw materials conforming to following technical specifications are available

7.1 Nitric Acid

- Total Acidity as HNO₃ Min. 96%
- Specific Gravity at 20°C Min. 1.495
- Dissolved Nitrogen Oxides Max. 0.01%
- H₂SO₄ Contents Max. 0.05%

7.2 Sulphuric Acid

- Total Acidity as H₂SO₄ Min. 96%
- Specific Gravity at 20°C Min. 1.835
- Total Nitric / Nitrous Acid Nil
- Salt organic Sulphite Traces

7.3 **PURIFIED BLEACHED LINTER**

Sr. No.	Test	Limits
1	Ability Absorption	The Cotton Linters must able to absorb nitric acid quickly.
2	Moisture	7.0 % max
3	Ash Content	0.60 % max
4	Ether Extractable Matter	0.25 % max
5	Lime, Chlorides and Sulphates	Only Traces
6	Copper Value	0.85 % max
7	Viscosity by Tappi	Min 15 Cp
8	Solubility in 7.14 % Caustic Soda Solution	5.00 % max
9	pH of Aqueous Extract	5.0 to 10.0

8. **SCOPE OF SUPPLY - HARDWARE**8.1 **Mechanical Electrical and Services**

The following hardware should be included in the supply;

- 8.1.1 Continuous Nitration plant and stabilization units by using purified Linter, complete in all aspects as mentioned in Para 4.3, including all process equipment, accessories to produce Nitrocellulose as per specification mentioned in 3.1.4 (Annex. I)
- 8.1.2 Production of Purified Cotton Linter required for MIL Grade is already carried out as per para 7.3, however parameters of Purified Bleached Linter for the production of Commercial / Industrial NC will be adjusted under the supervision & guidance of supplier
- 8.1.3 Flameproof light & fittings to provide sufficient illumination in and out-side buildings
- 8.1.4 Transfer pumps (including one installed standby against each) complete with motor, star / delta or VFD's starter along-with all necessary protections
- 8.1.5 Start / stop stations with volt & ampere meters for all motors, cable trays for power & instrumentation and mounting accessories
- 8.1.6 Materials required during plant erection e.g. all pre-fabricated supporting steel structure for plant equipment, pipelines, valves, gaskets, couplings and services such as steam, air, water etc. for all inputs and outputs required for the plant within battery limit
- 8.1.7 All civil works of the building will be carried out by the buyer according to design provided by the supplier.
- 8.1.8 Complete civil construction design / WORKSHOP DRAWINGS for continuous nitration house & stabilization house with control room will be supplied by the supplier.
- 8.1.9 Foundation layout drawings for other machines will be supplied by the supplier
- 8.1.10 Complete Chiller unit of suitable capacity along with all related accessories to produce chilled water.
- 8.1.11 Complete Instrument air systems including air compressor, capacity 5 m³ / min @ 8 Barg along with oil & moisture separator, and dryer (one standby against each installed) with accumulator to supply quality air to instruments as per ISA standards and minimum dew point at site, equivalent +3 °C at 8 barg, compatible with the provided system / plant. SS Piping for Instrument Air to be supplied

- 8.1.12 Intrinsically safe wireless or Intercom system for communication between control room & field operator as per process requirement
- 8.1.13 Intrinsically safe standard illumination system for all buildings inside battery limit
- 8.1.14 Lightening arrestors and Earthing system of all Plant, machines, equipment and steel structures
- 8.1.15 Earthing pits will be in the scope of Buyer however design will be provided by the supplier
- 8.1.16 All types of pumps and blowers (one installed standby pump against each) complete with electric motor, soft starter, VFD & thermal protection of motors (wherever required) along with all other necessary protections
- 8.1.17 Protection for Phase Failure, Over & Under Voltage, Transients & Spikes in Electric supply.
- 8.1.18 Electrification, Wiring and Cabling for process shop, Control Room, machines and equipment.
- 8.1.19 All Electrical Motors / equipment to be installed in hazardous area shall be conforming to Ex, Exi Rating with IP 65 Rating of all electrical motors / equipment.
- 8.1.20 All consumable items including welding electrodes & gases required during installation and commissioning of plant. Furthermore, all Oils, Lubricants and gases for first fill and sufficient for one year. Brands available in Pakistan market to be used.
- 8.1.21 Material of construction for manufacturing of equipment, piping, pumps and tanks shall be compatible with the relevant media thus ensuring plant life at least 25 years. Supplier will share the detail of materials in technical proposal
- 8.1.22 Safety devices and interlocks as per safe process requirement
- 8.1.23 Exhaust systems compatible with the explosives environment to be provided in process buildings to make environment moderate for comfort of workforce

9.1 FIRE ALARM & AUTO SPRINKLER SYSTEM

- 9.1.1 Fire alarm & auto sprinkler system with suitable sensors (where required) along with all related accessories including pressurized water system.

9.2 Safety Equipment

- 9.2.1 Safety items e.g. gas mask, face shield, apron, breathing apparatus etc along with necessary accessories.
- 9.2.2 Emergency Electricity-supply system for at least for 03 hrs backup time for safe shutdown of plant in case of power failure.
- 9.2.3 Fire retardant cables to be supplied for electrical and instrumentation

10. RECOMMENDED OEMS:

Recommended OEMs for supply of various parts are as under:

Sr. #	Category	Recommended OEM
i.	Control System	a. ABB b. Allen Bradley c. Honeywell d. Siemens OR Equivalent manufactured under the license of above OEMs,

ii.	Electrical & Instrumentation	<ul style="list-style-type: none"> a. Eaton, Germany b. Endress+Hauser c. Flowline, USA d. Schneider e. Siemens f. ABB g. Emerson h. Honeywell i. WIKA, USA <p style="text-align: center;">OR Equivalent manufactured under the license of above OEMs.</p>
iii.	Control Valve and Pneumatics	<ul style="list-style-type: none"> a. Emerson b. Samson c. FESTO, Germany d. Flowserve, USA e. Comp Air <p style="text-align: center;">OR Equivalent manufactured under the license of above OEMs.</p>
v.	Hydraulics	<ul style="list-style-type: none"> a. Rexroth b. Hydac c. Parker d. Eaton <p style="text-align: center;">OR Equivalent manufactured under the license of above OEMs.</p>
v.	Fire Detection and sprinkler system	<ul style="list-style-type: none"> a. Tyco b. Notifier, Honeywell c. Det-Tronics d. Sharp Eye <p style="text-align: center;">OR Equivalent manufactured under the license of above OEMs.</p>
vi	Centrifugal Pumps	<ul style="list-style-type: none"> a. Richter Germany b. Paul Bungartz, Germany c. Wilfly, USA d. March Pumps, USA <p style="text-align: center;">OR Equivalent manufactured under the license of above OEMs.</p>

vii	Air Compressors	a. Atlas Copco b. Kaeser c. Ingersoll Rand d. Comp Air e. Cope land OR Equivalent manufactured under the license of above OEMs.
viii	Chiller unit	a. Hafner Muschler b. Trane France c. J & Hall Dartford England d. Hitachi e. Ingersoll Rand OR Equivalent manufactured under the license of above OEMs.

11. INSTRUMENTATION AND CONTROL SYSTEM:

- 11.1 Plant shall be equipped comprehensively with Redundant DCS (Redundancy at the level of Controller, Power Supply and Communication) for measuring & monitoring to allow remote robust process control.
- 11.2 Monitoring & recording for acceptable duration of all essential process parameters to be provided at central station.
- 11.3 The measuring and control instruments must be accompanied with master calibration equipment.
- 11.4 All field instruments and electronic equipment shall be Ex ,Exi with IP ratings minimum IP 65, with 4-20mA signal + HART (Highway addressable remote transducer compatible
- 11.5 Auto & manual control system to be adopted for main processes in the production line with complete control & command in both auto & manual modes.
- 11.6 Complete support in Professional version software and hardware interfaces required at any level of application for field development, programming, troubleshooting of DCS, 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
- 11.7 All measuring instruments span values, alarm points and any correction factor if applied will be documented and handed over to Buyer.
- 11.8 All initial parameters for setting of all control devices will be documented and handed over to Buyer.
- 11.9 The DCS shall be programmed in Ladder or FBD in English language at all levels.
- 11.10 Portable industrial laptop / Notebook for programming and configuration.
- 11.11 There shall be no password at any operational level on any equipment and system.
- 11.12 The key equipment and processes must be equipped with intrinsically safe industrial CCTV monitoring system with programmable time laps recording
- 11.13 All Software (English language) provided by the firm shall be fully supported (life time) for online up-gradation, maintenance and trouble shooting

12. TOOLS, TACKLES AND EQUIPMENT

- 12.1 02 Tool Kits comprising of all essential tools required for installation and maintenance of mechanical equipment.
- 12.2 02 Tool Kits comprising of all essential tools, master calibration and test equipment required for erection, maintenance, calibration and programming of electrical and instruments equipment

13. SPARES:

- 13.1 02 year's spares recommended by the OEM shall be supplied.
- 13.2 In addition, following spares shall also be included in scope of supply:

a. Mechanical & Services

Valves and Stirrers:

- 01 against 04 installed
- In case installed quantity is less than 04, then 01 against each type shall be included

Bearings and Gaskets:

- 01 against 04 installed
- In case installed quantity is less than 04, then 01 against each type shall be included

Fittings:

02 pieces for each type

Spares for pumps and Blowers:

- 01 set of bearings and 02 set of mechanical seals against each installed.
- 2 impellers against each installed pump

Gear boxes:

- 01 against 02 installed
- In case installed quantity is less than 02, then 01 against each type shall be included

Air Compressor

- Oil Separator Oil Filter, Desiccant Cartridge, PD Filter Cartridges (02 against 01 installed)
- Adsorption Dryer, piston or screw, crank shaft, valve plate, Temperature and pressure gauges, electric motor, instrument controlling and safety devices (01 against 01 installed)

Chiller Plant

- Chiller compressors (01 against 4 installed and In case installed quantity is less than 04,then 01 against each type shall be included)
- Instrumentation and safety device. Impeller, shaft, bearing, Mechanical seals and fan (01 against 02 installed and In case installed quantity is less than 02,then 01 against each type shall be included)

b. Electrical:

Type:

- Starters (VFDs / Soft starters / DOL / Star Delta), Encoders, Sensors, Fire Sensors, Modules / controllers of the Fire system, and Motors (where standby arrangement is not available) etc. and shall be included.

Quantity:

- 01 against 04 installed
- 01 against each type in case installed quantity is less than 04

c. Instruments:

- 01 against 04 installed
- 01 against each type in case installed quantity is less than 04

d. DCS:

- At least 01 against each type of CPU, I/O modules, PSU and all communication modules.
- For multiple similar equipment of same type minimum 01 against every 04 installed.

e. CCTV:

- 01 camera including all accessories against every 04 installed.

14. ERECTION AND COMMISSIONING

- 14.1. The purchaser under the working supervision of the supplier's engineers and technicians shall erect the plant and all other equipment.
- 14.2. The plant will be commissioned by supplier's engineers. Purchaser shall provide the required number of operators and technicians for the commissioning.
- 14.3. The supplier has to indicate the total man-weeks of his engineers / technicians required for the erection, commissioning and trial run of the plant. Terms and conditions are to be stated clearly. All expenses including boarding, lodging, traveling and daily allowance of the supplier's engineers / technicians shall be borne by the supplier. However local transport will be arranged by the purchaser.
- 14.4. The supplier shall provide the time schedule for completion of the project.
- 14.5 Supplier shall provide complete civil workshop drawings along with BOQs within 1 x month after signing of contract.
- 14.6 POF will construct the buildings as per the provided drawings within 12 months after receipt of civil workshop drawings & BOQs.
- 14.7 The supplier shall provide the consumables required for installation and commissioning.
The supplier shall also submit details / list of all required consumables.
- 14.8 The supplier shall replenish the quantity of spares used during installation, commissioning and trial run.

15. TRIAL PRODUCTION RUN

- 15.1. After successful installation and commissioning, supplier will be responsible to produce 40 M. Ton Nitrocellulose production in 08 x days as per specification mentioned in 3.1.4 (Annex. I)
- 15.2 The supplier shall also provide guarantee for meeting the quality mutually agreed and quantity of the products. 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.
- 15.3 Purchaser shall provide the required number of operators and technicians for undertaking trial production run.

16. 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) including the following:

- 16.1 Detailed Drawings & Specifications of Plant & Equipment.
- 16.2 P & I Drawings, Equipment Layout and Schematic Diagrams.
- 16.3 Detailed Civil Engineering Design and Workshop drawings of the buildings including Foundation Plans with Load Values for the equipment to be installed.
- 16.4 Detailed Erection drawings.
- 16.5 Specifications of materials not included in the supplies but necessary for integration of the offered plant/ equipment.
- 16.6 Specifications of direct raw materials, indirect raw materials, intermediate and finished products including purified linter required for commercial / industrial grade NC.
- 16.7 Procedure for purified linter required for commercial / industrial grade NC.
- 16.8 Production process instruction / operational manuals for sequence wise start up and shut down of the equipment and processes.
- 16.9 Maintenance and services manuals of plant & machinery.
- 16.10 Complete safety manuals for all operations and production processes.
- 16.11 Fire Alarm and auto sprinkler system, system, where required.
- 16.12 All programs and configurations fed to any instrument, VFD / soft starter and PLC will be supplied in soft / DVD formats with no online or over web activation and without any restriction / password. Hard copies, where applicable, should also be provided.
- 16.13 All engineering details, data and tables involved in calibration and process calculations should be provided.
- 16.14 Manufacture and testing methods for the products.
- 16.15 OEM documents and calibration certificates should be provided for all instruments.
- 16.16 Manufacturing drawing for the fast wearing parts
- 16.17 Assembling/disassembling drawing
- 16.18 List of spares and fast wearing parts along with ordering codes and detail of Manufacturer/supplier.
- 16.19 Material Safety Data Sheet (MSDS) for any material other than supplied by buyer.

17. CLIMATIC CONDITIONS

- | | | |
|-----------------------------------|---|--------------------|
| i. Ambient temperature range | = | -2 to 52°C |
| ii. Atmospheric relative humidity | = | 25 to 90% |
| iii. Average annual rain fall | = | 450 mm |
| iv. Altitude above sea level | = | 1504.50 Ft |
| v. Earthquake Value | = | 8 on Richter scale |

18. AVAILABLE UTILITIES

Following utilities are available at site: -

- Electricity 400±5% volts 50Hz three phase.
- Electricity 220±5% volts 50Hz single phase.
- Raw Water at 2 Barg
- Steam at 3 - 4 Barg & 2 TPH
- Compressed air at 3 to 4 Barg & 15 CFM

19. BATTERY LIMIT

Battery limit means one meter outside the wall of the building up to which the purchaser will provide the required utilities / services. The purchaser will ensure to terminate all pipes with flanges at Zero level of each building.

20. LABORATORY FACILITIES

A well-furnished physio-chemical laboratory for testing of nitro cellulose and linter, raw materials and intermediate products is available. If any special testing for raw materials, semi-finished and finished products are required, equipment and testing procedure for the same may be included in the scope of supply.

21. ENGINEERING FACILITIES

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. Supplier may include special erection equipment like tools & lifting tackles of suitable capacities in the bid if required.

22. TERMS OF PAYMENT:

Payment will be made as follows;

- 70% payment will be released against presentation of shipping documents and acceptance certificate issued by PSI team.
- 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 store

23. WARRANTY GUARANTEE:

23.1 The plant / machines 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 warehouse in presence of supplier's rep (if desired by supplier) at their cost. The supplier shall render Warranty / Guarantee certificate in duplicate to the Purchaser on the enclosed Performa as soon as stores have been dispatched / delivered. This Warranty / Guarantee shall be binding on the Supplier for a period of **24 months** reckoning from the date of successful final acceptance test of the plant excluding the breakdown period

23.2 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. Rejected / broken stores shall be disposed by the SELLER under his own arrangements. The SELLER will warrant the good quality of all equipment supplied against all defects or failures due to faulty design, material or workmanship.

24. PERFORMANCE BOND

24.1 The SELLER will provide a Bank Guarantee to the tune of 10% of FOB value of the contract on the prescribed Proforma 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 24 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.

24.2 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.

24.3 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

25. TRAINING

25.1 ABROAD

Supplier shall train 10 persons on plant of similar production at the supplier's works site for a period of 20 x days. All expenses will be borne by Buyer including Air Tickets, boarding, lodging. However, internal traveling will be the responsibility of Supplier. This training is to be imparted on process, instrumentation, electrical & mechanical maintenance and quality control.

25.2 ON SITE

During the stay of supplier engineers at work site, they will be required to train the concerned production, electrical & mechanical maintenance, DCS and instrumentation and quality control personnel of the purchaser.

26 TECHNICAL SUPPORT

The supplier shall confirm that after handing over of the plant, there shall be continuing technical support as and when required by the purchaser. In addition, 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 10 years, commencing from the date of commissioning.

27. PRE-DELIVERY INSPECTION:

27.1 The supplier will arrange Pre-Delivery Inspection for 06 members at their site and at the site of their sub-contractors and vendors for 10 x days. 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. The pre - delivery inspection criteria are as under.

- a. Inspection of equipment in respect of material of construction, electrical & instrumentation specifications
- b. Spares quality and quantity
- c. Verification that the equipment conforms to the ordered specifications. The Buyer's team will check the bill of details, assembly protocols and test certificates of the relevant items
- d. Examination and testing would be carried out where feasible
- e. Certificate of quality and material specification will be provided during inspection of equipment
- f. Supplies shall be subject to the inspection and acceptance by inspection authority. Inspection facilities such as tools, test equipment, instruments etc. will be provided by the supplier in accordance with the relevant specifications
- g. Where considered necessary, stores may be obtained on Warranty/Guarantee, subject to inspection on receipt
- h. Rejected stores will be removed and replaced with the acceptable stores by the Supplier at his own expense, within a specified time.

28. EXPORT PERMIT

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

29. 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.

30. REFERENCE LIST

The Seller shall provide list of similar plant / machinery which have been provided to different customers

31. SEALED QUOTATION ON FOB BASIS

The supplier shall forward quotations / proposals complete in all respect in two parts, in separate envelopes. Each envelope must be clearly marked in bold letters as; **TECHNICAL PROPOSAL** and **COMMERCIAL PROPOSAL**.

32. TECHNICAL PROPOSAL

Comprehensive Technical Proposal must contain all the requirements mentioned in the Technical Specification of the plant.

33. COMMERCIAL PROPOSAL

Comprehensive Commercial Proposal shall contain total price of the project including:

- Price of Plant and Machinery with all accessories.
- Price of two-year spares against each item.

1. Mixed NC (with Purified Bleached Linter)

Sr. No	Tests	Limits		
		High Nitrogen Content (HNC)	Low Nitrogen Content (LNC)	NC- Blend
1	Appearance	Homogeneous compound free from Knots, Thread and other impurities	Homogeneous compound free from Knots, Thread and other impurities	Homogeneous compound free from Knots, Thread and other impurities
2	Nitrogen%	13.30-13.40	12.20-12.30	13.10-13.30
3	Mineral Matter % (Ash Content)	0.30 Max	0.30 Max	0.30 Max
4	Pulping Fineness (Settling test)	65 ml Max	65 ml Max	65 ml Max
5	E/A Sol.%	10 max	99 min	20-30
6	Alcohol Solubility %	-	-	3.00 max
7	Insoluble in Acetone %	0.4 max	0.4 max	0.4 max
8	Bergmann & Junk Test at 132°C ml NO	2.50 Max	2.00 Max	2.20 max
9	Abel Heat Test at 80°C	15 ' min	15 ' min	15 ' min.
10	Viscosity (Ostwald-Bhome)	2.50 – 5.00	3.00 – 6.00	4.0 – 5.0
11	Alkalinity as Ca CO ₃ %	0.25 max	0.25 max	0.25 max

2. NC-III (with Purified Bleached Linter)

Sr. No.	Tests	Limits
1	Nitrogen%	11.75-12.10
2	Mineral Matter % (Ash Content)	0.30 Max
3	Pulping Fineness (Sedimentation)	70 ml Max
4	E/A Sol.%	99 Min
5	Solubility in Ethyl Alcohol	12.0 % Max
6	Stability Test at 132°C NO ml / g	2.50 Max
7	Vielle Common stability test at 106.5 °C	7 Hour Min
8	Viscosity (Engler degree)	1.9 to 2.6
9	Alkalinity (Converted as CaCO ₃) %	0.20 max
10	Visible mechanical impurities mixed in the Nitrocellulose (Chips, Oxidized Iron chips etc.)	Nil

3. Low Nitrogen High Viscosity NC (with Un-Bleached Purified Linter)

Sr. No.	Tests	Limits
1	Nitrogen%	11.95-12.25
2	Pulping Fineness	90 -130 ml
3	E/A Sol.%	95 Min
4	Viscosity (Ostwald method)	40 -60 cst
5	Abel Heat Test at 80°C	≥15 minutes
6	Gel Formation with NG	Gel should be in Opaque state with 5.54 % (dry) NC within 10 minutes

4. Commercial / Industrial Nitrocellulose Various Grades

- i. Plant should be capable of producing commercial / industrial Nitrocellulose from purified bleached linter with low nitrogen (10.7-11.3), medium nitrogen (11.3 – 11.8) & high nitrogen (11.8-12.3) with varying medium, low & extra low viscosities as per international grades for use in Printing Inks, Paints, Metal lacquers, Wood coating, Leather finished lacquers & other miscellaneous applications.
- ii. Parameters of Purified Bleached Linter for the production of Commercial / Industrial NC will be adjusted under the supervision & guidance of supplier.

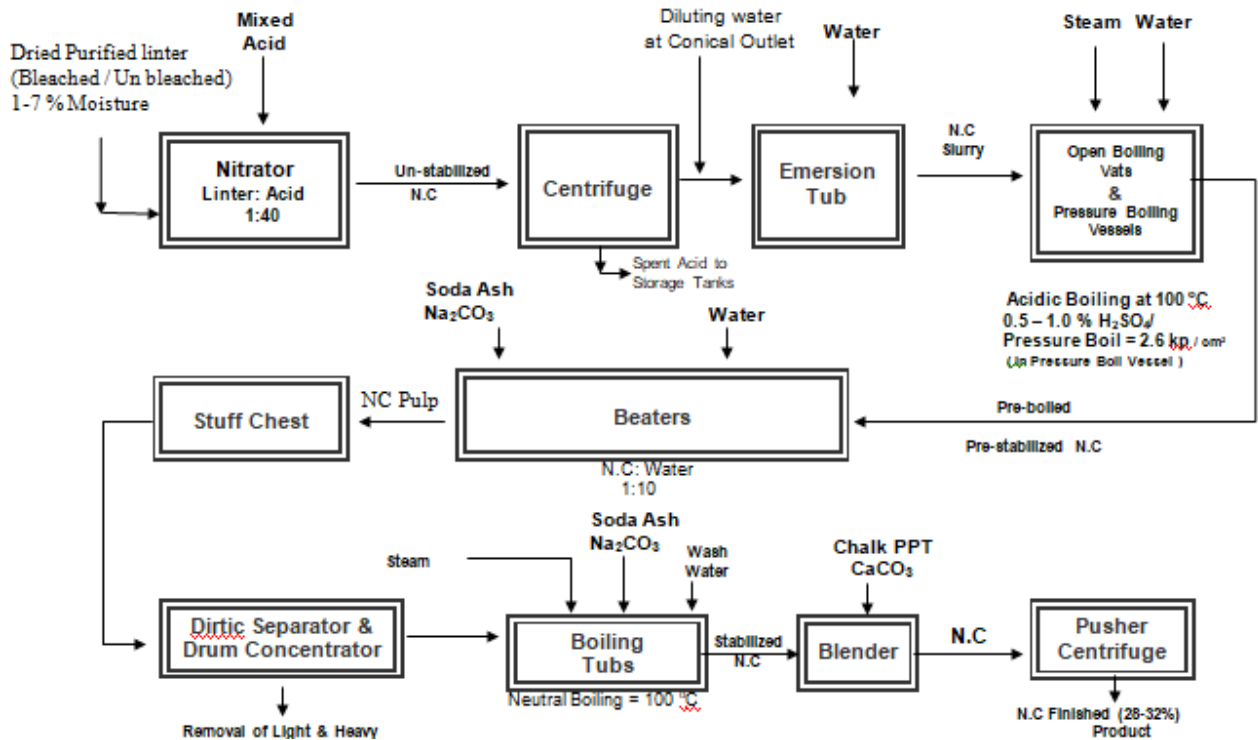
5. Trail Production of NC

Sr. No.	Type of NC	A/U	Qty to be Produced	Remarks
1	HNC	MT	12.000	Mixed Nitrocellulose as per Annex-I.Qty.16.00 MT.
2	LNC	"	04.000	
3	NC-III	"	08.000	-
4	LNC-H		06.000	-
5	NC (Lacquer)	"	10.000	Different grades of commercial / industrial NC
Total		"	40.000	-

Annex-II

BLOCK DIAGRAM: NITRO-CELLULOSE PLANT

EXISTING NITRATION & STABILIZATION ZONE



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 **24 Months** reckoning from the date of successful **Final Acceptance Test** of the **Continuous Nitration and Stabilization Unit** excluding the breakdown period.

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 **two years** 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